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Abstract

Materials collected in this book and in Volume I (SP 003 238) are related to the Multi-State Teacher Education Project (M-STEP). They deal with program experiments and resulting directions, including guide-line type materials resulting from the project effort and items prepared by other sources as project-centered aids. Part I, "A Forward View," includes (1) "The State Education Agency in Teacher Education," with suggested guidelines for assuming new roles; (2) "Whither Teacher Education?," a description of Florida state department efforts; (3) "Exploring the Uses of Television in Teacher Education," with M-STEP conclusions and recommendations; (4) "Television and Related Media in Teacher Education," summaries of 20 experiments; (5) report of "A Study of the Use of Microteaching and the Preparation of Elementary Teachers"; (6) three "Examples of Selected Video Applications in Teacher Education"; (7) "Interstate Commerce in Ideas," report of M-STEP's interstate activities. Part II, "Toward New Horizons," contains (1) "Challenges and Needed Developments in Teacher Education"; (2) "A Perspective in Educational Technology"; (3) "A Partnership: The Teacher Education Center", (4) "Evolving Characteristics of Quality Teaching: Teacher Education Centers, Team Teaching, Individualized Teaching"; (5) "Setting the Stage for the Future"; (6) Horizons Ahead! A

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# TEACHER EDUCATION IN TRANSITION

## VOLUME TWO

### EMERGING ROLES AND RESPONSIBILITIES

SP003139

M-STEP

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# TEACHER EDUCATION IN TRANSITION

## VOLUME II, EMERGING ROLES AND RESPONSIBILITIES

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# FOREWORD

This is the second, and final volume of the project report series. Like Volume I, the current issue describes segments of project goals, activities and outcomes. Also like the earlier volume, it offers analyses and points of view by both project and non-project personnel, on selected topics of major concern. Though it shows an awareness of the present, Volume II leans sharply toward the future.

The artist who produced the cover seems to offer the reader three alternatives. Those who wish may obtain from the volumes a glimpse of teacher education as it is becoming, or they may focus on one or more of its many facets. Others may direct attention to the open book and view the total scope of developmental concerns. Still others will be inclined to look beyond the text toward teacher education designs not yet within human vision, or at best only dimly so.

With due apologies for paraphrasing in words an artist's graphically expressed theme, and also paraphrasing at one point the words of the poet McCrae, it is appropriate to say:

> "To you. . .we throw
> The torch; be yours to lift it high."

Howard Bosley

Baltimore, Maryland

June 1969

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# PART I

# A FORWARD VIEW

# Chapter I

## The State Education Agency In Teacher Education*

As the problems in education become more interrelated, and the network of agencies concerned with them grows larger, it becomes evident that the role of the state education department must change. Each of the state's education agencies must bear a different relationship to the others if all are to be effective in bringing about solutions. None can stake out an area and claim that area as his responsibility, and none can say that any area is of no concern to him. Much has been said in years gone by about a state education agency (SEA) as *coordinator* or *leader* as contrasted with *regulator*. These concepts were valuable in changing some attitudes in state education agencies at a time when regulation was descriptive of most that was done in teacher education and certification sections (mostly certification; little teacher education) in state education agencies. But a whole new look, not a touching up of the old picture, is called for at this time. What is that new look? What kind of image should the state education agencies seek to create? Should it be the same in every state?

Before attempting to deal directly with these questions, it may be useful to view a composite of the state education agencies across the nation. The sketching of this composite may help to identify some problems which will need to be solved before a new image can be created.

One does not have to go back many years to find the date at which the term "teacher education" began to be used in describing one of the bureaus, divisions, or departments of the state education agency. Before that date, there was a department of "certification," and the name was descriptive of the function. In those days it was the business of the state education agency to get the best possible certification requirements established and to administer them without favoritism. If the head of the unit did this, he was regarded as a good civil servant worthy of a banquet and a gold watch when he retired. He had nothing to do with teacher education except to see to it that the transcripts matched the written requirements in a perfect overlay. What lay back of the transcripts was of no concern to him. Three hours of credit in the teaching of reading meant the same to him from the best and the poorest institutions. The credit was regarded as academic legal tender. The major requirements of the functionaire of such a department were that he have courage, patience, and the ability to organize to handle details.

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*By W. Earl Armstrong, Florida State University, Tallahassee and Howard E. Bosley, Project Director, Baltimore.

Then came the councils on teacher education during the mid-1940's. With them came a closer working relationship between the SEA, the institutions, and the practicing personnel in the school. The purpose of involving the agencies outside of SEA was basically to get agreement on guidelines which could be used in deciding whether programs proposed by institutions would meet the spirit, if not the letter, of the certification requirements. Out of this grew the "approved program" idea. As it became clear that the programs as described on paper were only a slightly better index of quality than transcripts had been before, these teacher education advisory councils (TEAC) recommended that some machinery be established to investigate the paper programs to see what facilities and resources undergirded them. This became known as state accreditation or approval. In reality, the purpose of accreditation was to satisfy certification requirements, which in turn were means of regulating. At first, these TEAC's represented a feeble effort to give the institutions a little freedom in determining how they would meet certification requirements for the graduate. At best, they constituted the mechanism through which the state education agencies could get some advice on the way they should work. The focus was always on the SEA's and how they would operate, never on how all agencies working together could get a job done. Advisory councils were never allowed to forget the locus of authority; they were teacher education advisory councils, and the agencies getting the advice were the state education agencies.

There was never a real partnership developed among the schools, the institutions, and the staff of the SEA by means of which all agreed to work together toward the solution of problems in which each had a stake, and without whose combined efforts little progress could be made. They did not cope with problems such as the failure of at least one-fourth of the first-year teachers to report for duty the second year, or tried as full partners to design a plan to make a substantial reduction in this number. The institutions never regarded this as a problem, and the state department of education thought it belonged primarily with the schools. Nor did they ever make a serious effort to see what the schools, the institutions, and the SEA could do to tie the preservice and inservice units of a teacher education program into one continuous piece. These are examples of problems in school personnel, the solutions to which require the joint efforts of several institutions and agencies.

This sketch of the ways state departments of education have functioned in the past does not within itself suggest a clear-cut function for the state education agency. Perhaps the best answer that can be visualized from the present vantage point is that the role of the SEA will vary from state to state and within a state as the strengths of the other institutions and agencies rise and fall. The state moves forward more like a tornado than like a straight wind, and as new elements are added, or old ones dropped, the nature and the momentum of the whole operation changes. At times, the major leadership may come from one institution or even from one individual within that institution. At other times, the most forward-looking ideas may come from the state education association. At still other times, it may come from an outstanding principal, supervisor, superintendent, or teacher. Or the state department of education or some person in it may supply most of the new and exciting ideas. The genius of the future will lie in the ability of the various institutions and agencies to move forward together under leadership that may come from different sources at different times as different problems are faced. On most problems all will need to be working in some capacity.

Each member of the complex of institutions and agencies will need to have at hand adequate personnel and other resources to work on matters of mutual concern to all members of the complex. At times, some members of the complex will need to assign personnel to work on matters not considered central to their functions. Whether central or marginal, all members of the complex will need to be involved in most problems of teacher personnel. The matter of teacher salaries will serve to illustrate the importance of having several institutional agencies involved in the solution of one problem. Certainly, teacher salaries for the elementary and secondary schools are not central to the functions usually assigned to colleges and universities. But if an adequate supply of competent persons is to be made available for service in the public schools, economic considerations cannot be ignored. Since the university is interested in an adequate supply by competent persons in the schools, it must therefore give some attention to, and work with, other institutions and agencies in seeing that this factor is kept in proper balance in the total effort of all agencies to attract and hold competent persons.

The spark, then, for significant changes in teacher education is likely to come from any one of several agencies within the state. The hard facts of reality would make it impossible to designate any of these as the leaders all across the United States, and effective strategy would make it inadvisable to attempt to breed a particular pattern of operation among the fifty states.

Rather than being a type of opportunism, this consideration can be regarded as high level strategy in the use of available resources. When it is performing its proper function, the state department of education is in a position somewhat like the coach of a football team. The pattern of plays which the coach will design should depend upon the kinds of materials with which he has to work. If he has a good passing quarterback, it would be foolish to build his strategy almost entirely around a running game. If in a parallel way the state is blessed with some outstanding institutions of higher education with leaders inclined toward innovation, it would be unwise for the state department of education to stifle that innovation by trying to standardize on the kind of breakthrough it would like to have taking place within the state. In either case, the goal is success or progress, rather than the application of a process.

The genius of state education agency operation will be in finding its place in the total orchestration of influences in any given state.

## DEVELOPMENTS NECESSITATING CHANGES IN TEACHER PERSONNEL PROGRAMS

Education has been caught up in the whirlpool of change which has characterized the 1960's. The state education agency should not expect to be exempt from this influence. In fact, one of the major reasons for reexamining the role of the SEA at this time is to determine what changes need to be made in order to attune it to the present and foreseeable future. The present may turn out to be a favorable time to do this reexamining simply because of the unsettled state of education, especially teacher education. The question, then, is not whether the SEA should change its purposes, its structure and its program, but rather how much and in what direction the changes should be made.

Changes affecting education have already been enough to suggest greater emphasis on some purposes than is now the common practice. Also, these changes carry clear implications for the structure and program for the state education agency, but before attempting to describe the changes needed, it seems wise to examine the major changes in education which have implications for the SEA, its role, its structure, and its program.

1. Education has become oriented increasingly toward preparing persons for specialized positions in society. Especially since World War II, all schooling has pointed toward specialization. Every effort is now made to get the prerequisites of specialization out of the way as soon as possible in order that the individual may move toward specialization. This is being done because the work of society now and in the foreseeable future requires specialization at an ever increasing higher level. Up until now society has not required that individuals learn how to make decisions on matters necessary to keep society together to match the decisions they must make in their workaday world. But conditions in society now are fast becoming such as to cause a change in the direction of education for citizenship to balance the education for work.

The implications for teacher education and the role of the SEA appear to be: (a) as the knowledge and skills which society demands of the individual become more specialized, the education of the teachers in those fields will have to be more specialized; (b) the role of change will require the teachers to renew their knowledges and skills at increasingly frequent intervals; therefore, the schools and the universities will have to merge their efforts in the development and maintenance of programs that continue from the time of admission to teacher education, to the time of retirement of the individual teachers; and (c) some teachers will need to be prepared to give particular attention to the needs of the individual for citizenship training, while others will give attention to their specialized needs.

2. The tensions and frustrations of society are causing groups to try to use education to promote the ends they desire. Absolute academic freedom becomes increasingly hard to come by as those who would upset the status quo are resisted by those who would maintain it. Schools at all levels are being watched by the liberals to see that they are not favoring the conservatives, and by the conservatives to see that they do not favor the liberals. The schools are and will be caught in the middle and will therefore find it difficult to convince society that schools should be allowed to engage in the pursuit of truth in the interest of the general welfare.

The societal conditions which tempt many to try to bend the schools to their own ends carry some implications for those concerned with teacher personnel problems. First, national, state, and local governmental machinery for dealing with educational matters should be such as to minimize nonprofessional interference. Second, professional organizations should be strengthened to help individuals and local groups to resist interference. And third, better lines of communication need to be established between educators and other groups in order to avoid the possibilities of interference. No single agency such as the SEA can do this job alone. The SEA's, however, cannot leave this responsibility entirely to other institutions, organizations, and agencies.

3. The teaching profession is becoming more aggressive in the direction of autonomy and in its efforts to assure conditions favorable to an educational program. This more positive stance has been caused in part by the inability of educators to get through regular established channels what they regard as reasonable progress in matters bearing on education. Doubtless, the whole civil rights movement has influenced teachers also. So has the economic affluence of society stimulated a desire on the part of educators to participate in the economic benefits of production and distribution. But perhaps most of all, the teaching profession is showing signs of maturing. More and more of its members have become well informed on a wide range of matters. Being knowledgeable, they do what all knowledgeable

people do; they begin to inquire into things. Their inquiries uncover what they regard as inequities and wrong priorities. Their knowledge gives them power and they begin to use that power to gain autonomy.

Obviously, this trend in American education has important implications for SEA's. Some of these are negative and some positive. The negative ones are not necessarily bad, but they may challenge the status quo in SEA's. For instance, the teaching profession as it matures may insist on having a stronger voice in the requirements for initial certification and for certificate renewal. It may wish to take responsibility for deciding when teacher behavior justifies the revocation of certificates. On the positive side, the profession may desire greater involvement in determining content of college courses and experiences to insure an adequate supply of professional personnel for the schools. One thing for sure: the teaching profession will become more of either a partner or an opponent of the SEA and less of a servant to it. At least a better educated, more aggressive teaching profession will preclude business as usual in SEA's.

4. Recent developments require educators to reappraise the roles of teachers and consequently the programs for preparing them. These developments are of two major types. First, specialists in the sciences, mathematics, languages, and other fields have developed curricula and supporting packages of materials for grades kindergarten through twelve. Second, industry has created hardware and software to implement these and other programs, good or bad, which industry itself has developed.

If present trends continue, teachers will not be designing the curricula which they will follow in their teaching. Instead, they will be selecting from materials made available from the subject specialists (scholars) and making adaptations to fit their local situations. Hopefully, industry will be developing software according to specifications drawn by teachers. If so, industry will become the servant of the teaching profession instead of its master. At the present time, teachers are forced to accept or reject whatever has been developed by industry without very much consultation with the practicing professionals. These different roles will call for changes in both preservice and inservice teacher education programs. At the preservice level, emphasis will need to be on the development of criteria for evaluating curricula developed by subject specialists and on the writing of specifications for the guidance of industry in developing software. The difference between the old and new roles of teachers will be comparable to that of the old and new roles of housewives. Whereas the colonial housewife grew and processed her food and grew and processed her fabric for clothing, the modern housewife selects from food and clothing grown and processed by someone else. The knowledges and skill necessary for the one role are not adequate for the other. And besides, some professional persons will be doing one part of the teaching job, and other persons will be doing another. The term "teacher" therefore in the new generic sense will have to be redefined in terms of the kinds of roles which will be required in the implementation of the new program.

Certification will need to be completely overhauled and the role of the SEA in inservice programs will have to take on new forms. Practically all teachers now in service were prepared originally to be their own curriculum makers. They served as the chief instruments for getting ideas before their pupils. Few tools at all comparable to videotape, tape recorders, projectors, and the like, were available to do some of the things the teacher was expected to do. Inservice programs will need to be centered on helping experienced teachers to understand what changes in the role of teachers the new conditions require, and what new insights and skills will be required of them in order to bring about these changes. The inservice program will need to deal largely with such matters. The SEA will have to determine how it meshes with other institutions, organizations, and agencies in designing and carrying out an effective inservice program.

5. Within the past five years the federal government has taken steps which are certain to influence teacher education. The Bureau of Research in the U.S. Office of Education took the initiative in 1967 to encourage the development of model programs for the preparation of elementary teachers. More than eighty institutions presented proposals, and nine of these were funded through the specifications development stage. Eight have been funded for making feasibility studies. Eventually, it is expected that a limited number will be selected as demonstration centers where the model programs will be implemented and further developed. Most of these are so designed as to require the joint efforts of the major institutions, organizations, and agencies in a state or region.

During the same year, the Congress passed the Education Professions Development Act. This legislation is designed to assist with the major problems bearing on attracting, preparing, and maintaining an adequate supply of competent teachers. Participation in the various aspects of this legislation also requires inter-institutional cooperation. Other legislation has been enacted within the past five years which provides support for promising programs, many of which bear either directly or indirectly on the improvement of teacher personnel. Much of this legislation provides funds directly to the state departments of education, but the successful implementation of these programs requires joint efforts by more than one unit in a state department of education and high level cooperation between the SEA and other organizations, institutions, and agencies within a state.

The changes in education which have been sketched in broad outline above serve to highlight the need for a reappraisal of the functions and the structures of SEA's. Obviously, it will be next to impossible for SEA's to operate in the future as they have in the past. Since change is inevitable, it is important that the change be made not in an opportunistic manner in response to immediate pressures but, instead, on the basis of principles growing out of an analysis of conditions and a forecasting of the future.

## FUNCTIONS WITH WHICH SEA'S SHOULD CONCERN THEMSELVES AND CHANGES NECESSARY TO MAKE THIS POSSIBLE

Up to this point, this introductory chapter has described typical activities in state departments of education and has given examples of changes in education which are certain to call for changes in the roles of state departments of education. The chapter has argued that if changes are to be made, as certainly they must, every effort should be put forth to see to it that such changes will help SEA's to fit into the emerging complex of forces that are certain to shape education, especially teacher education, in the future. The purpose of this section of the chapter, therefore, is to describe the functions which state education agencies can reasonably be expected to concern themselves with and the changes that will need to be made in their point of view, organization, and personnel to make this possible.

### *More Emphasis on the Full Sweep of Teacher Education and Less Emphasis on Certification*

It is important that state education agencies move more rapidly in the direction of devoting more of their time and energies to teacher education and less to teacher certification. This shift in emphasis will involve a number of things, but perhaps most important of all will be a psychological change. Personnel in state education agencies will have to accept the idea of a partnership among various institutions and agencies on matters relating to teacher education as an acceptable way of working. This will mean less emphasis on a "somebody has to be boss" attitude and more on a "what each can do to help" attitude. To put it another way, SEA's need to make a drastic shift from regulation to participation on somewhat even terms with large numbers of agencies and institutions. Certification has been an example of regulation unwisely applied. It is true that many states have attempted to involve various organizations, institutions, and agencies in this process to take the sting out of regulation, but the hard fact of regulation still remains. For several years forward-looking state departments of education have been favorable toward the "approved program approach" to the preparation of teachers. They have said, in effect, that they will issue certificates to graduates of teacher education programs which they have approved. A careful examination of the teacher education programs in those states, as well as other states, reveals that colleges and universities have not taken advantage of this newly announced policy. The fact that all of the institutions in each one of these states have developed teacher education programs that parallel almost item for item the state certification requirements, as spelled out in the bulletins, bears mute evidence of the ineffectiveness of this policy.

*The policy seems to have been ineffective primarily for two reasons. First,* at the same time the state education agency has called on the institutions to exercise initiative in designing programs, it has proceeded to fence in by limitations the kinds of innovations that are possible and acceptable to the state education agencies. The action has been comparable to the policies of the Ford Motor Company during the 1920's with reference to the color of cars. Ford used to say that he could provide any color, so long as it was black. In effect, these state departments of education have generally said that they would approve any teacher education program so long as it met the details of the certification requirements.

*Second*, the SEA's have generally stated in their certification bulletin in an introductory chapter that the approved program approach was possible. Usually this statement has consisted of one or two paragraphs wherein the general idea was expressed in broad terms. The remainder of the bulletin has proceeded to describe in very detailed fashion the way to get certificates issued and renewed under a pattern in no sense related to the approved program approach. Each state department of education will have to find its own way to make clear to the institutions concerned the policies which will be followed in approving teacher education programs in issuing initial certificates, and in keeping those certificates in force. Doubtless, there would be less confusion on the part of all concerned if state departments of education would set forth policies that apply to the certification of teachers under each of three different sets of conditions. The first would set forth those policies that apply to the certification of teachers who are prepared in colleges and universities located within the boundaries of the state. These policies might very well include the approved program approach, in which case the general conditions under which a program would be approved should be set forth in terms clear to the institutions and schools in the state. A second set of policies would be designed to provide for the certification of teachers who receive their initial preparation in colleges and universities outside the state. These policies would apply specifically to those institutions outside the state in whose programs the state concerned had reason to have confidence. The basis on which the completion of such programs would result in certification should clearly be set forth in this set of policies. The third set of policies could relate to the means to be used in the certification of teachers from outside the state who had graduated from institutions whose quality was either in doubt or unknown by the officials of the state concerned.

*Third,* when institutions are given free reign, they are inclined to construct programs without regard to those being employed by curriculum personnel of SEA's or LEA's. A closer harmony should be effected between realities of the situation and the expertise which unquestionably exists in program planning personnel in institutions which prepare teachers.

*In order to make this shift from emphasis on certification to emphasis on the whole span of teacher education*, including both preservice and inservice teacher education, it will be necessary to do at least three things. *First*, the staff of the department will either have to be retrained or replaced. Even if all of them now hold the highest possible degree, some of them will not be in tune with this shift in function. They will not understand the behavior that will be required of a person to operate in this new direction. Their feelings and attitudes will be more of a stumbling block than their lack of understanding. This retraining job will require considerably more time, effort, and patience than replacement, but obviously it is more humane and could be more effective in the long run.

It will need to be remembered that all persons who will be related to the total scope of teacher education from the time of admission to the time of retirement will need to be able to work effectively with all of the organizations, institutions, and agencies that will likewise be concerned with this endeavor. Many persons now associated with departments of education have only one orientation; namely, the public schools. This constitutes a handicap in dealing especially with universities and some other groups that will be concerned with the total program. Likewise, those staff members who have had experience only at the level of a higher institution or some other agency not directly associated with the public schools have a similar handicap in working with public school people. The earlier identification of a staff member should therefore be taken into account in deciding what kind of retraining program is necessary and what kind of assignments he should carry.

*Second*, a reorganization of the staff of the department will be necessary. Presently state departments of education tend to have a section or division on teacher education and certification, and another division on curriculum and instruction (probably including supervision). Each of these units has a certain set of functions that it is expected to perform and each makes every effort to see that they do not overlap. If the thesis being set forth in this statement is to be implemented, the separation of the functions of these two units in state departments of education cannot be so neatly made. In most cases, both of these units will be involved. As the shift in emphasis turns from departmental budgeting to program budgeting, staff members in state departments of education will be moving from one task force to another which may cut across presently organized departmental lines. The question will not be "How many faculty members do we need to man this particular section of the department of curriculum and instruction?" Instead the question will relate more directly to the staff and other resource needs to accomplish a task that may well cut across department lines. This is meant to be merely illustrative of the kinds of decisions with reference to internal organization which a shift in emphasis may require in state education agencies.

*Third*, machinery that brings the SEA's into partnership with other institutions, organizations, and agencies will need to be established. Not only is reorganization within essential for purposes of determining how personnel within the state education agency may best be allocated to tasks, but some machinery will be necessary within the SEA's to determine what aspects of the total problem can best be handled by that agency and what may well be left primarily to other agencies. Typically, at present a state education agency either does all or none. In the period of interdependence into which education is being pushed by a force of circumstances, this will no longer work.

### *More Emphasis on Recruitment of Persons Who May Become Teachers*

This is the second function with which SEA's might well concern themselves. As in all other functions now developing, the state education agency is neither fully responsible nor can it do the total job alone. Two aspects of this problem will be used to illustrate a possible role for the state education agency in recruitment.

*First*, prospective teachers need an early awareness of many things that go into becoming a professional person in the field of education. They need to know something about the requirements for admission to such programs, the kinds of scholarship required, the nature of the training program at the preservice level, the possibilities for growth at the inservice level, and the like. In order to gain such information, one of the most fruitful approaches has been through the involvement of prospective teachers in activities in the schools and related agencies where such insights may be gained. State departments of education are closely associated with the schools and with the institutions that are offering the first two years of college work, which in most cases precedes admission to teacher education.

*Second*, in this relationship the SEA's can encourage the proper working liaison between the schools and the junior or senior colleges where major resonsibility for early involvement and awareness programs will rest. The junior colleges and the lower divisions of the senior colleges will not only provide this early awareness involvement, but will also in the process be collecting data for future use in determining admission standards to programs of teacher education. The SEA need not be centrally involved in this process, but certainly will need representation on task forces that are giving particular attention to the problems of recruitment. The SEA, however, can be centrally involved in the collection of information relating to economic factors that bear on careers in education, including cost of living, tax deductions for further education, differentiated staffing, and the like. Here major responsibilities for such studies need to rest in the state education agency, but should be shared by the schools, institutions, regional educational laboratories, testing and measuring services, and industry dealing with hard and software programs.

### *A New Direction or Emphasis on Field Conditions To Reduce Inservice Attrition*

Obviously, the problem of preparing an adequate supply of teachers for the schools becomes more difficult when the demand is increased by at least ten percent each year because of teacher dropouts from the profession. At least one hundred eighty thousand teachers per year quit teaching in the elementary or secondary schools for one reason or another. This is a larger number than all of the twelve hundred colleges and universities supplied each year on an average for the past ten years. Because attrition of those in service is so enmeshed with the problem of preparing an adequate supply of teachers, the colleges and universities should be concerned with this problem and involved in its treatment. Generally in the past, however, colleges and universities have acted as if this were none of their business. So have SEA's, and so have school systems. As a result, little has been done by anyone to attempt to reduce the percentage of teachers in service who find it desirable or necessary to drop out. No one can be sure, but this might turn out to be one of the productive areas in a broad program to provide an adequate supply of qualified teachers for the schools.

The following are a few things worth trying through joint efforts by SEA's, school systems, state education associations, and colleges and universities.

*First*, the placement and assignment of teachers during the first year after they have completed their preservice programs. The institutions should make every effort to place their graduates in school systems where what is going on in the schools is in closest harmony with what has been included in the preservice teacher education program. To illustrate, teachers prepared through a behavior-based program with adequate facilities should not be placed in traditional schools where textbook teaching is the rule. Some school systems may find it desirable to designate certain school building units within their districts as the schools in which to place most of their beginning teachers each year. These schools could gear their programs to the newer developments in education for which, hopefully, the beginning teachers will be prepared. This practice would not only make it possible to make an easy transition from college to teaching, but might also provide a pool of up-to-date talent for transfer to other schools within the same district after these teachers had had two or three years of experience in working together. But even if this idea seems impractical, school systems and colleges need to work more closely together in seeing to it that teachers who are new to a school system do not get the leftovers in their assignments.

*Second*, facilities and equipment are necessary for an adequate program of education. Colleges and universities need to work with schools in seeing to it that schools are adequately equipped to do the kind of teaching for which the colleges and universities prepare their graduates. The SEA, the institutions, and the school systems in a given state might very well have a task force on something of a continuing basis to work on this problem.

*Third*, the task of teaching is becoming too complex for any one educator alone to handle. The provision of teacher aides and educational secretaries will become increasingly important as differentiated staffing patterns become more widely used. Only the beginnings in this area have been made. Before settling down to any particular staffing pattern, all concerned with this problem should try a number of different approaches. Whatever the pattern, it should be in the best interests of the children to be taught, should provide an educational ladder for the teacher to climb, and should provide the best possible learning experience for the teachers at all levels in the differentiated staffing pattern. Here, as in all of the other matters relating to teacher personnel, the SEA's, the school systems, and the colleges and universities not only have a stake but also have a role in working toward an acceptable solution.

*Fourth*, faculty participation, especially on curriculum and materials policies, and the evaluation of teacher effectiveness. It should go without saying during these times that those who are influenced by policies need to be involved in the determination of those policies and their implementation. As suggested earlier in this chapter, the teaching profession has not missed the point of human rights in the happenings in society during the past ten years. Most of the strikes among teacher personnel within recent years have been traceable largely to their inability to participate in curriculum policies, in the selection of materials of instruction, and in determining how their services will be judged. If teachers are concerned about such matters to strike, certainly many of them will find it desirable to drop out of the profession because they do not have an adequate voice in such matters. This is at least an area which might be considered in the total effort to reduce the attrition rate.

*Fifth*, studies bearing on all pertinent factors relating to supply and demand of school personnel. Obviously, the state education agency, more than any other one unit in the complex of institutions, organizations, and agencies, should be involved in such studies. The schools, the institutions, the education profession, and the like, should also devote some budget and personnel efforts in the collection of such information. If it turns out that the basic factors which affect supply and demand are such that an adequate supply of well-prepared persons for work in the schools appears to be impossible, then the schools, the colleges and universities, and the state education agencies should set about to make other arrangements. On the other hand, if the factors are favorable, then it would be possible for all concerned to move toward higher standards.

*Sixth*, the organization of school districts and methods of selecting district chief administrative officers. It is possible that there is a relationship between the size of the school district and the ability of districts to attract and hold an adequate supply of teachers. At least studies with reference to such matters need to be made by all concerned. There is also a strong possibility that the quality of leadership in school districts, especially counties in certain states in the United States, may have a distinct bearing on the ability of a school district to attract and hold an adequate supply of teachers. In some states a county school board must work with whoever from the county is willing to run for county superintendent of schools. The point to be made here is that the quality of the school personnel in any school district may have a strong relationship to the quality of leadership which is present in that school district. If this is the case, all concerned with getting and holding an adequate supply of teachers should not overlook this as an area of investigation.

The analysis above of some major functions with which SEA's should be concerned and the changes necessary to make this possible has been made to illustrate some different points of emphases needed in SEA's. These emphases have included greater attention to teacher education at both the preservice and inservice level, with less attention to the details of teacher certification; more emphasis on recruitment of persons who may become teachers; and more emphasis on field conditions and efforts to reduce the attrition of teachers already employed. The focus has been on the importance of SEA involvement in these matters without necessarily controlling all efforts made in these directions. The amount of involvement and control by SEA's will depend upon what the other institutions, agencies, and organizations concerned with these matters are able to provide by way of leadership and finance. But it cannot be emphasized too strongly that SEA's will not be able to work in this way under the present plan of organization in most SEA's and with the present personnel without a retraining program.

## STATEWIDE COMMITTEES AND TASK FORCES

Although strictly permissive, this approach seems to be working well in states which have tried it. However, "real" partnership among state departments, schools, colleges and universities, and professional organizations still has not flowered on the national scene. The SEA must begin in earnest to harness minds and energies, beginning perhaps by sponsoring statewide committees which represent all these interests. Such committees and task forces have challenging work ahead of them. For example:

1. American teacher education still has not agreed upon commonly accepted skills and competencies which should be required of its practitioners. Something like a babel of tongues now exists as to what should be the curriculum for preparing teachers. Some of this is perhaps understandable, considering the explosion of knowledge in basic disciplines and the mushroom growth of instructional technology, which educators have hastily tried to patch into their existing programs. The state representative task force or committee, set up by the SEA, could address itself to reaching agreement on the scope and type of curriculum experiences, the understandings, techniques, and competencies needed by the teacher, and then get to work in devising the process that will furnish these for him.

These designs are long overdue. Even those individuals who have been in education all their adult lives cannot project what public education is going to be like 20 years from now, except that it will be vastly different from the way it is today. What is clear is that programs of teacher preparation will need to possess a new orientation and revolutionary new techniques, and it is hardly consoling to face the certainty that students who will attain their peak of professional influence within this 20-year period of time will soon enter the teacher preparation programs of our colleges and universities.

2. The old administrator-supervisor-classroom teacher hierarchies may be on the way out of our schools, to be replaced with team teaching structures. State committees should examine the trends on school staffing and decide on the kinds of training that will be needed for various specialists–ranging from the upper level instructional specialist to the professional associates, assistants, residents, interns, and teacher aides. One new upper level specialization that is badly needed is that of supervising teacher of teacher-trainees while the latter are taking part in laboratory class learnings and related clinical experience.

3. With knowledge exploding all around him, the teacher-on-the-job cannot be expected to keep up, without recourse to some new sources and systems of inservice training. The "half-life" of professional knowledge may be well under the ten years sometimes suggested. Certainly, the prospective pace of accelerated development and creation of new knowledge during the 1970's will greatly shorten the period during which even the best teacher can maintain superior effectiveness without acquiring entirely new insights and techniques. But where is he to obtain these? Traditionally, the college and

university have not offered programs of inservice education—it has not been their role to develop systems for keeping professional teachers abreast of technological and professional progress. Here again is an urgent problem to come under the purview of the statewide committee.

4. The state committee should put its best brains to work on the development of systems for "getting the word around" to all institutions in the state on promising new teacher education trends. Some state agencies have actually wasted vast sums of money by going around their states on a one-to-one basis. If learning centers were set up in various sections of the state, SEA personnel could work with the centers instead of trying to work with individual teachers. Demonstrations of model teacher education programs could be held in these centers.

5. Behavioral objectives should become an integral part of teacher preparation programs, and a tremendous job needs to be done—hopefully by all interests involved—in setting up definitions, pilot designs, experimentation, and evaluation to see what works and what doesn't. The use of behavioral designs, with attendant learning experiences, may have great significance for inservice applications. These could include the development of resource banks of related learning materials.

## ASSUMING A NEW ROLE: SOME SUGGESTED STEPS

What does the SEA need to do to take on this new and challenging task of improving teacher education? Some specifics might include:

1. *Prove to the colleges and universities* that it means what it says in favoring the "approved program" approach. The SEA may need to outline several different ways whereby various teachers may get certification: (a) one policy for those teachers prepared in the state's own institutions; (b) another policy for those prepared by out-of-state institutions accredited or approved by a recognized body; and (c) a third policy for graduates of institutions about which the state department of education knows very little. The point is that a clear delineation of policies for different types of situations might help to break the regulatory barrier which still exists in the minds of colleges and universities in spite of announced policies to the contrary.

2. *Reorganize itself* to promote innovation and to ensure that preservice and inservice education remains all of one piece. At the present time, nearly all state education agencies are organized and operated so that they leave the impression there is a "teacher education" unit which influences preservice programs, and another unit called "curriculum and

instruction" or "curriculum, instruction, and supervision" which applies to the improvement of instruction in the schools. At its best, the improvement of instruction in the schools could be inservice teacher education. At its worst, it is an effort by supervisors to improve teaching on an individual basis in the schools.

These two units in state departments of education are going to have to come together if real innovations are to take place. Changes in operations by both must happen. Certainly the curriculum and instruction unit will have to give up the idea that it can be all things to all people all over the state. Instead it will have to concentrate in centers of learning, demonstration centers, experimental inservice education programs, and the like. The members of that department will have to constitute themselves into teams to work in these centers to bring about significant changes in education. They will have to mesh the improvement of education programs for boys and girls with possibilities for inservice education for the teachers.

3. *Minimize staff fears of change*. It making the transition from "regulator" to coordinator of teacher education, SEA's would naturally be giving up some of the functions traditionally served and would be assuming new ones. There is always fear (whether conscious or unconscious) of change, the unknown, new adventures. SEA personnel would experience doubts, fear, reservations in making such a dramatic change in the structure and purpose of their organizations.

Another area of fear would be that of trusting others. In assuming new functions, SEA people would have to expand their contacts in order to learn and experience new things. They would often be dealing with a new clientele and be exposed to new and different problems. All of this calls for genuine interpersonal communication, a difficult endeavor requiring candid behavior and earnest attention by all hands.

4. *Learn the techniques of group coordination*. The varied specialties of individuals in a working group provide an effective climate for individual professional development. SEA's need to learn to manage this technique. Up to now, SEA's have not had to guide and coordinate working groups; in their proposed role as coordinator, this will be a key function. The success of a movement is often the outcome of effective leadership-coordination techniques; SEA's will have to become competent in this area if teacher education programs are to improve.

5. *Marshall support for SEA as a leader in teacher education*. The typical state education agency is oriented toward public education rather than teacher education. This means that if extra funds become available to the SEA occasionally, the agency will add a supervisor of English, for

example, to its staff, or will use the money in some way geared to public education. SEA personnel involved in teacher education must reach the power structure in order to advance the cause of teacher education. Because no one person can bring to bear the power of persuasion, pscychological support systems must be constructed both within and outside of the SEA in order to create the proper climate for growth and improvement of teacher education.

6. *Funds are especially needed for "incentive" purposes.* A little money placed by SEA in strategic places can do much to stimulate innovation. The incentive approach could stimulate schools' interest in teacher education, and the amounts of money involved would not need to be vast.

7. *Encourage experimentation by others.* It is not necessary that the state education agency have its own facilities for experimentation. Coordinators do not have to do the experimenting themselves, but rather stimulate and encourage experimentation by others (institutions, school districts, and other agencies).

How would they stimulate? One way would be to set up committees cutting across divisions of SEA, established to serve as task forces. Such committees would serve as project teams, drawing on individual skills and knowledge of the various team members. This has been tried at Florida State University. As an interdisciplinary project, the team tapped experts from the department of elementary education, the public schools, and the SEA. Resources available included computer services, consultants from higher education, behavioral psychology, developmental psychology, etc. Every member of the team was an expert in a particular field, with no two members specializing in the same area.

SEA's would also stimulate experimentation by bringing together the colleges and the public schools, thus creating a "live" laboratory setting. The colleges would provide the student teachers, and the public schools would furnish authentic classroom settings and other resources, much in the same way that the hospital provides the medical student with a real laboratory environment and real subjects.

Another resource is the advanced graduate school. By making contact with the graduate schools in its state, the SEA could arrange to involve the schools in its projects and programs, using advanced graduate students as assistants.

8. *Get colleges to talk to each other.* Colleges do not seem to engage in interinstitutional communication to any great extent, at least not

spontaneously. But the SEA could bring together representatives from several universities in the state to exchange ideas on topics of mutual interest, and thus gain valuable information for research and other purposes. Generating communication among schools, colleges and universities could be a monumental challenge for every state education agency. Many examples could be cited of successful efforts in this direction. Perhaps three will suffice.

In Michigan, there has been much activity in statewide communication for teacher education. The Reaction Panel, originated by the Bureau of Higher Education in the Michigan State Department of Education, is composed of fifteen selected school and college personnel representing the organized regions in the state. The Reaction Panel was appointed to assist in developing a statewide plan for the regional improvement of student teaching programs.

Michigan Regional Councils serve as another example of how the SEA can involve teacher education institutions and the public schools in cooperative activities. Each of the regions has a Council whose members represent teacher education institutions and school districts. Each Regional Council is charged with carrying out specific assignments.

In Utah, a very effective program for interinstitutional communication and collaboration has a more informal structure than that of Michigan. Periodic (though not regular) visits are made to the various institutions in the state participating in M-STEP projects. The visiting groups are generally composed of deans of institutions in the state and personnel from their various departments. (Not only teacher education personnel attend the conferences, but also interdepartmental groups.) Brigham Young University may be the location of one meeting; Utah State University, the scene of another; Weber State College, a third; and so on.

West Virginia has established a Pilot Center for Student Teaching, an organization based on the cooperation of teacher education institutions, the public schools and the West Virginia State Department of Education. The Center is designed to operate under an Advisory Committee of nine members- one representative from each of the five cooperating teacher education institutions, three from the Kanawha County public schools, and one from the state education agency. Students from each of the participating teacher education institutions are assigned to the Center for their student teaching experience. During the school year 1968-69, the student teaching center idea has been adopted by other institutions and counties in the state.

# Chapter II

## Whither Teacher Education?*

There are many people looking at teacher education these days. And they are looking from many vantage points—from federal bureaus in Washington, from giant corporations, from colleges and universities, from professional organizations, and from public schools. These people are seeing in teacher education the seeds which can germinate to have profound effects on all phases of education. Yet in many fields these seeds are starving for cultivation. Whither teacher education? The answer depends upon the manner in which the teacher education seeds are cultivated—not only by colleges and universities but also by professional organizations, federal and state governments, the public schools, and private businesses.

This chapter describes current efforts of the Florida State Department of Education to encourage the cultivation of teacher education seeds. It does not, of course, answer the question "Whither teacher education?" Still, it provides an indication of the type of cultivation teacher education seeds are receiving in Florida.

The reader will note that teacher education is not viewed here as a function restricted to colleges and universities or controlled exclusively by college and university personnel. While preservice teacher education normally begins on a college campus, a major role is played by personnel in elementary and secondary schools. Furthermore, it is assumed that in future years most teacher education will take place in the schools rather than on campus. While preservice programs will continue to prepare persons to begin to teach, rapid changes in knowledge and technology will require teachers to continue to learn. Colleges and universities will play an important role in this continuing education, but the magnitude of the task will preclude the possibility of college personnel actually conducting the training. The colleges will, instead, provide specialized advanced training for the educational leaders—the senior teachers, senior administrators, and supervisors. These people will, in turn, be responsible for most of the inservice education.

### THE MEASURE OF TEACHER EDUCATION

How can Florida (or any other state) obtain an index of the quality of its teacher education programs? By totaling the number of graduates from its preservice teacher education programs? By counting the number of papers, articles, and books published by members of its teacher education faculties? By tallying the number of research grants obtained by its teacher education institutions? By recording the number of hours of graduate work completed by its public school personnel? By noting the number of workshops and conferences attended by its public school personnel? By reviewing the number of inservice education programs conducted in its public schools? While many of these may be important criteria, they are not in themselves sufficient.

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The measure of teacher education quality is the quality of teaching which takes place in the schools. The mission of teacher education is to foster quality teaching. Thus, to evaluate teacher education, it is necessary to evaluate the performance of teachers in the schools. And to improve teacher education, it is necessary to obtain information from these evaluations which can be related directly to specific aspects of teacher education programs. The global types of evaluations which label teachers as "excellent," "satisfactory," or "poor" are of negligible value as indicators of the type of inservice education which is needed or of the type of modifications which should be made in preservice teacher education programs. In order to be useful, the evaluation data must be directly relevant to teacher education objectives (either preservice or inservice).

However, if evaluations directly relevant to teacher education objectives are to be in themselves valid, a prior condition must be met. That is, the teacher education objectives must be relevant to the goals schools set out to attain. In other words, if teacher education objectives are not valid in terms of the goals the teachers are expected to accomplish in the schools, an evaluation of teaching performance directly relevant to those teacher education objectives will constitute an invalid measure of the quality of teacher education. If teacher education programs teach teachers to master skills which are not relevant to the goals the teachers must pursue in the schools, the programs are not quality programs, no matter how well the teachers have mastered the skills they were taught.

The relationship between educational goals, teacher education objectives, and teacher evaluation is depicted in Figure 1. Box A represents the goals to be achieved in the schools by teachers. These goals may change, as they are continually being reevaluated by society (Box B). It is the responsibility of professional educators to make judgments regarding the knowledge and skills needed by teachers in order to accomplish the school goals. This process (represented in Box C) results in teacher education objectives (Box D). Research on teaching is conducted to confirm or refute the validity of judgments regarding appropriate teacher education objectives (Box E). In conducting such research, controlled experiments are designed to show the relationship between certain teaching procedures or skills and the accomplishment of certain teaching goals.

Once teacher education objectives are defined, preservice and inservice teacher education programs are designed to accomplish these objectives (Box F). The programs are then implemented (Box G). Throughout the implementation, programs are monitored to see that they are being implemented in the manner in which they were designed (Box H). The evaluation–the measure of the quality of inservice and preservice teacher education programs–is represented in Box I. Such evaluation provides information directly relevant to the teacher education objectives. If the objectives are not being accomplished, modifications in the design of the teacher education program are in order.

### *Evaluation of Teaching in Florida*

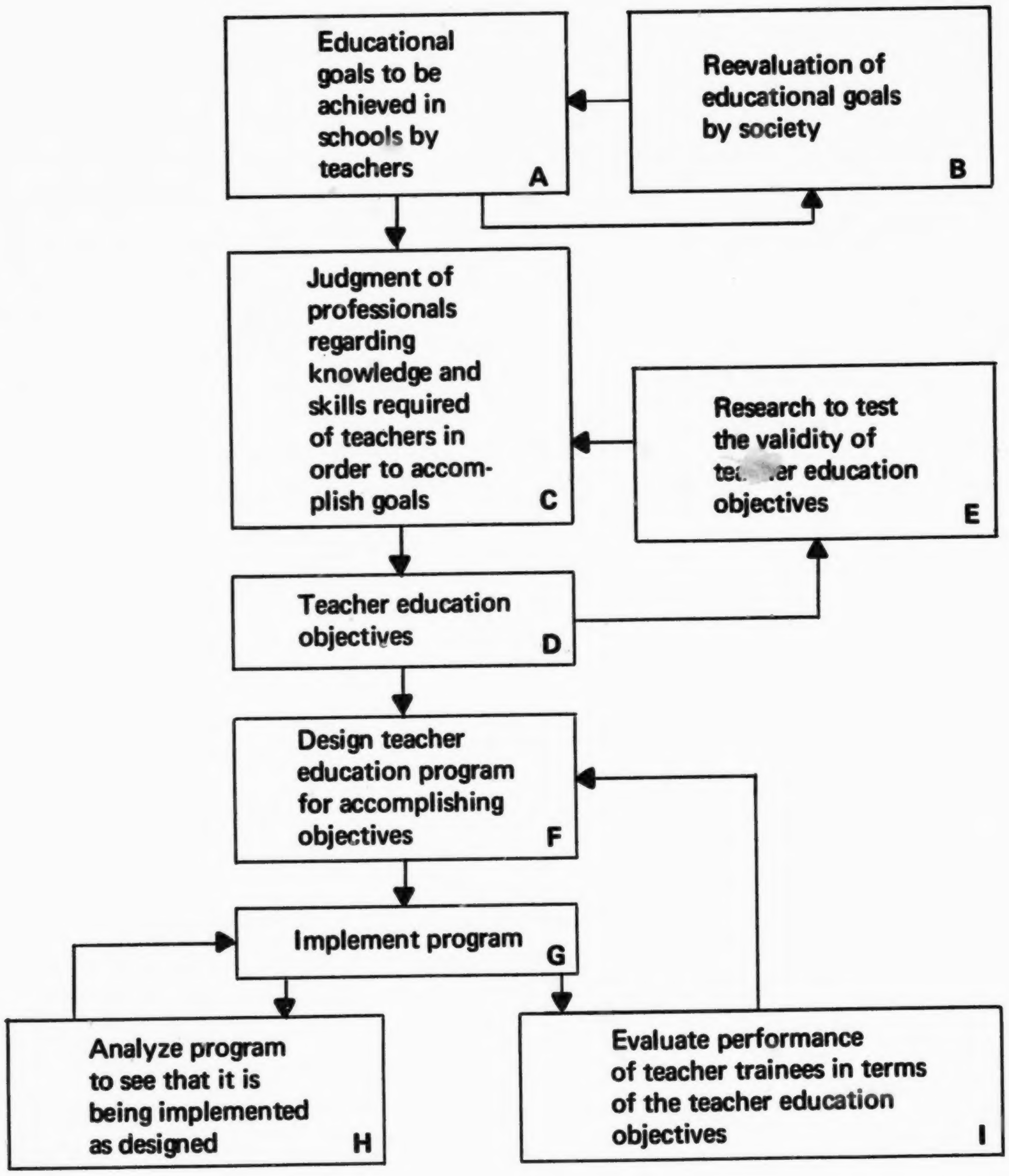
Florida is one of the few states which has established a statewide program for evaluating the performance of educational personnel. This program, created by statute, requires that each district superintendent implement a program for evaluating annually the performance of the instructional personnel in his district. The purpose of such evaluation is to improve instructional, administrative, and supervisory services. The mechanism for such improvement is, of course, teacher education.

While all Florida school districts have established evaluation criteria and procedures as part of the statewide program, the information presently being yielded in most cases is not of the type which can be related directly to teacher education objectives. This can be attributed to limitations inherent in the currently available statements of objectives for preservice and inservice teacher education, as well as to limitations in evaluation criteria which have been established. Thus, in order to improve the existing systems for evaluating teaching in local school districts, it is necessary to clarify objectives for teacher education. Pilot school districts are being identified. The State Department of Education intends to concentrate its resources allocated to the evaluation program in the pilot districts. Then, as the programs develop, information will be disseminated to other districts.

## THE TEACHER FOR OUR TIMES

The job of teaching in the public schools is much more complex and much more difficult than it was a decade or two ago. The schools–through the teachers–are expected to accomplish complex goals with virtually all persons in the school-age population. In earlier times, pupils were expected to read certain books, spell certain words, perform certain arithmetic operations, and remember certain facts. Today, there is too much to be

Figure 1
A MODEL FOR DEVELOPING AND EVALUATING
TEACHER EDUCATION PROGRAMS


Educational goals to be achieved in schools by teachers
A
Reevaluation of educational goals by society
B
Judgment of professionals regarding knowledge and skills required of teachers in order to accomplish goals
C
Research to test the validity of teacher education objectives
E
Teacher education objectives
D
Design teacher education program for accomplishing objectives
F
Implement program
G
Analyze program to see that it is being implemented as designed
H
Evaluate performance of teacher trainees in terms of the teacher education objectives
I

learned for anyone to learn all of it. Thus, educators are forced to select among many different educational goals. Furthermore, knowledge and skills learned today may not be useful tomorrow. Therefore, in addition to learning how to read, write, and cipher, pupils must learn *how to* learn.

Moreover, teachers are expected to attain complex educational goals with all types of children. In past years, it was not anticipated that every child would complete the basic school program. Children who lacked the necessary interest or aptitude were expected to drop out. Today, many concepts and skills deemed necessary for useful life must be obtained in school. The basic school program has been lengthened, and every child is expected to complete this program. Children cannot be permitted to fail.

It seems likely that in the future public education will be expected to do even more things for more people. Thus, teaching, as it has been traditionally perceived, will become more and more difficult. And capable teachers will become harder and harder to find.

But the situation need not appear so bleak. As the role and expectations for the school are changing, the role of the teacher must also change. In industry, more sophisticated technology has been continually developed to produce the more sophisticated products which have been demanded. Likewise, as more complex and reliable results are demanded from the schools, more sophisticated technologies of teaching must be developed and applied. Unless the technology of teaching becomes more highly developed, quality teaching for the majority of students will be virtually impossible.

Traditionally, the most prized talent of a teacher has been the ability to "ad lib." The teacher has been expected to design on his own a unique set of procedures and materials for use in each teaching situation. Thus, the materials and procedures available in any given situation were limited to those which the individual teacher was able to devise or develop in the time available.

With the present necessity for accomplishing more difficult objectives with widely varying pupils, the teacher cannot afford such limitations. He must instead be able to select intelligently among a wide range of materials and procedures which have been developed by persons with much greater skills than he at designing instructional materials. It will take much less time to adapt these materials to his pupils than it will to design his own materials. Therefore, he will be able to use a wider range of materials than would otherwise be available.

It is the teacher's knowledge and understanding of the technology of teaching that makes this possible. The technology of teaching provides him with information on the choices available. It also provides him with insight into the probable results of selecting a particular alternative. Also, the technology of teaching will provide the teacher with an outline of procedures to follow in implementing his choices. Without such technology, teachers will be limited, students will be limited, and the effectiveness of public education will be limited.

It should be noted that a more extensive application of technology to teaching is not in any way antithetical to the concept of teaching as art. Just as advances in technology have enhanced the art of clothing design, the art of photography, or the art of homemaking, advances in technology will, likewise, enhance the art of teaching.

A teacher practices his artistry when he selects the unique combination of teaching behaviors, teaching materials, and student activities to accomplish the desired educational objectives. Technology provides the teacher with a repertoire of teaching behaviors, a repertoire of materials, a repertoire of student activities, and insight into the probable results of each. The teacher then selects the appropriate combination of these teaching resources, much in the manner that an architect selects the appropriate combination of building resources. In either case, certain combinations under certain conditions will result in art.

### *Differentiating Teacher Roles*

As teaching objectives become more complex and as teaching technology keeps pace, it seems unlikely that a teacher with the normal preservice preparation will be capable of specifying appropriate educational objectives or selecting appropriate technology. On the other hand, once the objectives and technology have been selected, the beginning teacher will no doubt have the skills necessary for conducting much of the teaching that is essential in order to accomplish the teaching objectives. Moreover, many of the activities necessary to accomplish the teaching objectives may be of a type which could be carried out by a person in training for teaching or by a person with lesser qualifications.

In sum, it may be advantageous to develop a hierarchy of differentiated roles in teaching. This would make it possible to make optimum use of the limited number of persons who meet the qualifications for the top level of teaching decision-makers. It would also strengthen the teaching profession by providing a "career ladder."

Such a differentiation of teaching roles leads to a revised concept of teaching. Under the traditional model of teaching activity, teaching is assumed to comprise (a) the presentation of ideas or information to pupils and (b) the supervision of these pupils as they work with the ideas or information presented. Both the presentation and the supervision have been assumed to be the exclusive domain of the professional teacher. In the differentiated role model described above, it is proposed that there be differentiated levels for professional teachers and also that some of the tasks traditionally viewed as teaching might be carried out by subprofessionals (i.e., persons with less than a bachelor's degree). Thus, the professional role of the teacher must be redefined.

In order to adapt to a possible differentiation of teaching roles, the following definition of teaching is proposed: *Teaching is a decision-making/decision-implementing process intended to promote learning.* The types of decisions made in teaching can be summarized with three questions:

1. What, specifically, does a teacher want pupils to learn (i.e., what does he want pupils to know, feel, or be able to do that they do not already know, feel, or have the ability to do)?

2. How will the teacher determine the extent to which pupils have accomplished the objectives?

3. What materials and procedures should be used to accomplish these objectives (i.e., what technology should be applied)?

Underlying the decision-making/decision-implementing concept of teaching is the assumption that the responsibility for answering the questions above should rest ultimately with the highest level of professional teacher. This assumption places decision-making at the heart of teaching. However, once the decisions are made, they can be implemented by others, provided that such implementation will not require professional decisions the implementor is not qualified to make. Also, it is necessary that the implementor possess the necessary skills to carry out his part of the implementation. Hence, while the decision-making aspect of teaching is always in the domain of the professional teacher, the decision-implementing aspect may sometimes be performed by subprofessionals.

The Florida State Department of Education is now making plans for developing and operating model programs of flexible staff organization. These programs will test various approaches for differentiating teacher roles.

## TEACHER EDUCATION FOR OUR TIMES

Teacher education is viewed as a broadly based system of activities designed to bring about quality teaching. The training of teachers and other educational personnel is only one of three fundamental elements in an overall teacher education system. A second element is research on teaching and learning. A third element is dissemination (of the research results).

The first element—the training program—consists of three components: a design component, a training component, and an evaluation component. The design component produces procedures and materials which will provide teaching candidates with the knowledge, attitudes, and skills they need. In the second component, the training of teachers is carried out. The third component, evaluation or quality control, provides information as to the extent to which the objectives of the training program are being accomplished. These elements are all present in the model for developing and evaluating teacher education programs shown in Figure 1. The design component is represented in Boxes G and H. Box I represents the evaluation component but can also be considered part of the training component since continuous evaluation is normally viewed as a desirable facet of training.

The second element, research on teaching and learning, is an essential part of a teacher education system. It is the mission of the research element to develop the technology of teaching. As was pointed out earlier, such technology provides a basis for a rational approach to teaching as well as to teacher training. It clarifies the relationship among different types of teaching behaviors, different types of teaching materials, different types of pupils, and different types of results. It provides a sound theoretical basis for organizing educational programs to obtain the desired educational results.

Dissemination also is a necessary element in a teacher education system. The research described above is of little benefit if provisions are not made for disseminating its results. A dissemination system must be provided so that those responsible for operating educational programs may have access to the most up-to-date technology. This technology comprises not only the mechanical or electronic devices but also patterns of teaching and administrative behavior which have been demonstrated to yield certain results under specified conditions.

In the teacher education system operating in Florida, the State Department of Education does not conduct teacher training programs. The responsibility for instituting and carrying out such programs rests jointly with teacher education institutions, county school systems, and professional organizations. The Department does, however, attempt to help schools, colleges, and professional organizations to obtain better information for making better decisions about teacher education and to encourage the initiation of new and improved programs. Thus, the Department participates in the dissemination element of the teacher education system described above. This dissemination takes place through conferences, publications, and consultants. It has been proposed also that the Department participate actively in the research and development element of Florida's teacher education system. The Department has assisted in drafting legislation which will provide for a coordinated program of research and development administered by the State Commissioner of Education and conducted in participating schools or centers throughout the state. The purpose of the program would be to test specific educational programs and practices to determine the feasibility of implementing them.

### *Schools/Colleges/Professional Organizations*

From the outset, this paper has been advocating a much closer relationship between teacher education and teaching. The measure of effective teacher education—either preservice or inservice—is the quality of teaching which takes place in the schools. As the discovery of new knowledge and the development of teaching technology accelerate, most teacher education will necessarily be inservice education and will take place in the schools. Because of the magnitude of the task, it will be necessary that most of the teacher educators be practitioners in the public schools rather than college professors. Yet, college professors will continue to be the ones on the cutting edge of new knowledge and teaching technology.

Such a system of developments makes essential the establishment of effective communication and collaboration among schools, colleges, and professional organizations. While a good deal of progress has been made recently, there is still a chasm between schools and colleges when it comes to communicating about teacher education. As an example, consider the public school teachers who are responsible for supervising student teachers. While the purpose of student teaching is to give college students an opportunity to apply the theory they have learned in their professional courses, supervising teachers are seldom able to describe the theory which has been taught. Thus, there are no planned theoretical applications or analyses. To view the problem from the other side, consider the situation of a school district which wishes a course from a college or university that will meet a specific inservice education need. While there are notable exceptions, oftentimes such courses are not available. In the case of professional organizations, individual groups usually identify either with the colleges or with the schools—seldom with both.

A natural medium for promoting communication and collaboration among colleges, schools, and professional organizations is the Florida Teacher Education Advisory Council. This is a legally created body which advises the State Commissioner of Education on matters related to teacher education. Its membership includes both college representatives and practitioners from the public schools, as well as lay members. The public school representatives are nominated by professional organizations. The Council's present strategy for facilitating communication between colleges and schools relative to teacher education centers around the development of guidelines for teacher education programs. The guidelines are intended to assist both schools and colleges in designing and evaluating teacher education programs (both preservice and inservice) for educational personnel in specific subject or service areas. The guidelines are developed by task forces composed of Council members and representatives (both professors and practitioners) of the specific subject or service areas to which the guidelines will apply. In order to be acceptable, the guidelines must meet the following criteria:

1. They must cite the types of behaviors in children which are expected to be fostered through the services of the personnel participating in the teacher education program.

2. They must describe the competencies needed by teachers in order to provide the desired services.

3. They must describe the teacher education experiences needed to develop the desired competencies.

4. They must present criteria for selecting candidates for the teacher education program.

5. They must include a plan for following up persons who have completed the program to determine their effectiveness on the job.

6. They must be applicable to both preservice and inservice teacher education programs.

The staff of the State Department of Education works closely with the Teacher Education Advisory Council on the development of guidelines, as well as on other activities of the Council.

### *Developing Teacher Education Procedures and Materials*

The demands placed on teacher trainers are in some ways comparable with the demands placed on "the teacher for our times" described earlier. This is particularly true in inservice education. The teacher trainer, from year to year, is faced with the problem of meeting a great many different needs in a number of different teachers. Because the teacher trainer in inservice education will normally have other duties in addition to teacher training, he will not be able to devote a great deal of time to developing materials and procedures for meeting the varying teacher training needs of a wide range of teachers. Consequently, he must draw upon materials and procedures which have been developed by others. Hopefully, he will have knowledge of a large repertoire of "packaged" materials and procedures which he can adapt to the needs of his trainees.

The State Department of Education has sponsored three different projects for developing teacher training "packages." A package consists of the following:

1. A set of objectives which describes fully what the package user will be able to do after successfully completing the package procedures.

2. The appropriate procedures and materials for accomplishing each of the package objectives.

3. Evaluation exercises or activities which can be used to determine when the package user has accomplished the package of objectives.

In each of the projects, classroom teachers have been released from their regular teaching duties for varying periods of time to develop teacher training packages. Some assistance in these projects has been provided by college personnel and State Department of Education staff members. In all cases, the packages have been designed for use in inservice education and have related to such teaching skills as using reinforcement, asking questions, establishing set, control of participation, developing listening skills, and using audiovisual media in instruction.

The next step in the development of these teacher training packages will be to conduct extensive field tests and to make the revisions needed. College personnel will participate extensively in many of the revisions.

### *Planning To Meet Educational Manpower Needs*

With greater application of technology in teaching and differentiation of teacher roles, the problem of finding the right person for any given job is apt to become more difficult. Also, as teacher education programs become more specialized and expensive, greater efforts will be made to concentrate teacher education resources upon persons who will actually go into teaching.

There are several measures which can be taken to increase the available number of candidates for educational positions in the state and/or to decrease the number of educational candidates needed. These include (a) increase the number of persons entering teacher education programs, (b) increase the proportion of Florida teacher education graduates entering teaching in the state, (c) decrease the proportion of teachers who leave teaching, and (d) increase the number of qualified teachers not teaching who accept educational positions. This scheme is depicted in Figure 2. The general aim is to increase movement along the solid lines and decrease movement along the broken lines. The Department is attempting to stimulate research to identify factors which influence movement along these lines.

In addition, the Department conducts research to identify the extent of movement along the lines depicted in Figure 2 and also carries out programs to influence that movement. The extent of the movement is monitored with status studies based upon questionnaire data and computer analyses of state personnel records. To influence the movement, the Department carries out the following activities:

1. Administers scholarship programs intended to increase the number of persons in teacher preparation programs in Florida.

2. Conducts an advertising program to encourage teachers teaching in other states to move to Florida to teach.

3. Collects, compiles, and distributes information on teaching vacancies in Florida for use by candidates seeking teaching positions.

4. Collects, compiles, and distributes information on candidates seeking employment in Florida for use by school district personnel officers.

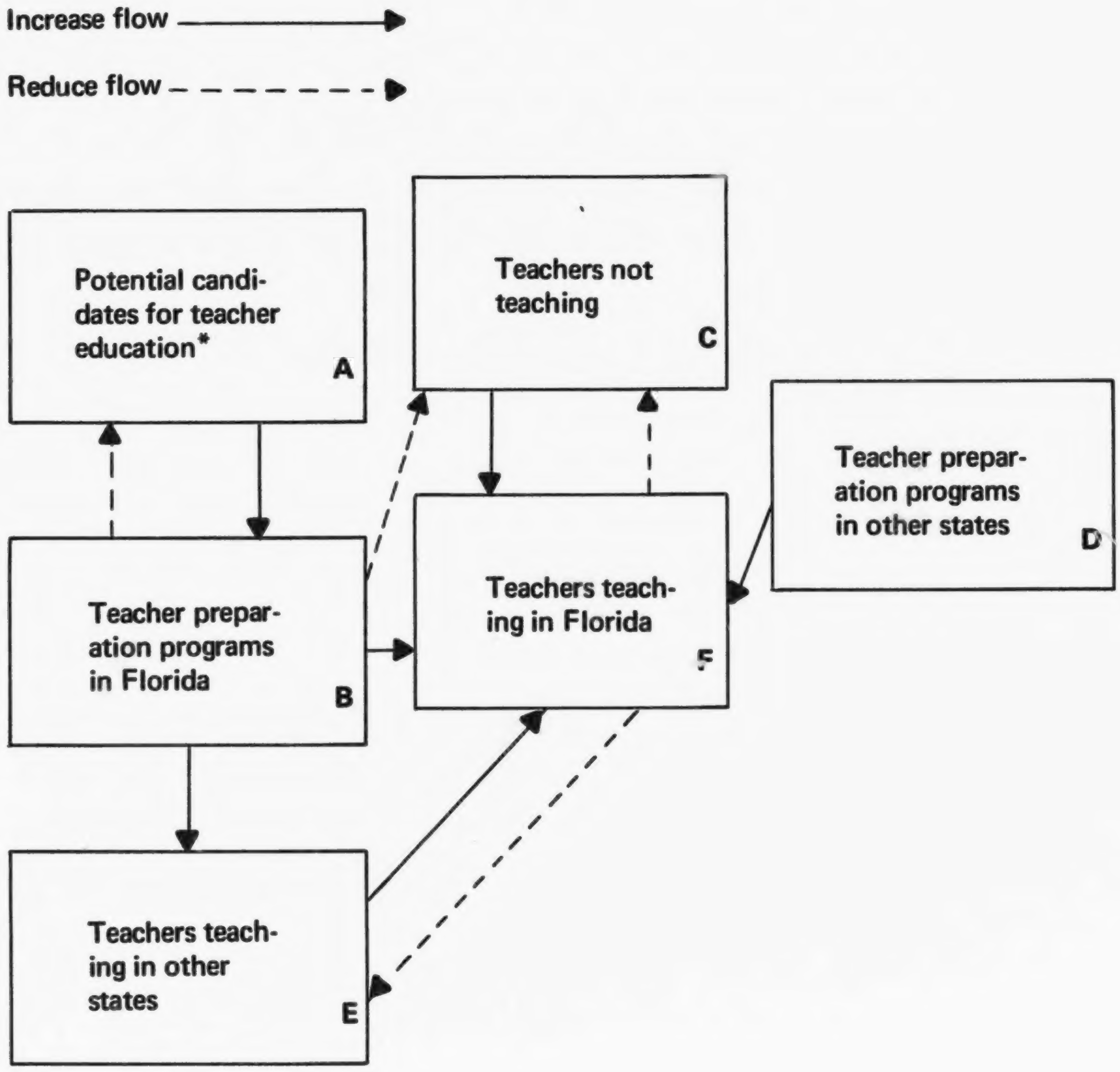
5. Develops materials and procedures for use in the inservice training of persons who interview candidates for employment in public schools.

6. Projects future personnel and needs through use of a computer simulation system to assist teacher education institutions and public school systems in long-range planning.

## DEVELOPING TEACHER EDUCATION PROGRAMS

The major mission in teacher education of the Florida State Department of Education is, of course, to encourage the development of teacher education programs which will prepare quality teachers to teach in Florida schools. The preceding sections have described activities and conditions which are expected to influence the development and implementation of teacher education programs in schools and in colleges. As in almost every other state, the Florida State Department of Education is responsible for administering the approval of teacher education programs in the state. Such approval is granted by the State Board of Education to higher

Figure 2
MODEL FOR INCREASING THE
SUPPLY OF TEACHERS


Increase flow
Reduce flow
Potential candidates for teacher education*
A
Teachers not teaching
C
Teacher preparation programs in other states
D
Teacher preparation programs in Florida
B
Teachers teaching in Florida
F
Teachers teaching in other states
E

*Potential teaching candidates include pre-college students, college students not in teacher education, and college graduates from programs other than teacher education.

education institutions and by the State Commissioner of Education to school districts which meet the prescribed regulations or criteria.

*Teacher Education Programs in Local School Districts*

Local school districts are encouraged to develop master plans for inservice teacher education. Upon request of the district superintendent, these programs may be evaluated by visiting committees appointed by the State Commissioner of Education. Then, on the basis of information provided by the committee, the Commissioner may approve the school district's master plan for inservice education. The purpose for approval is to provide visibility to school districts which have designed effective systematic programs of staff development for improving the competencies of instructional personnel to perform their assigned duties. When programs have been approved, teachers participating in the program may have their teaching certificates extended (renewed) on the basis of such participation.

In order to receive approval, a school district must meet the following requirements:

1. Conduct a self-study (annually) of the inservice teacher education program in the district.

2. Prepare a master plan for inservice teacher education encompassing a period of five years.

3. Provide a statement of objectives, a summary statement describing the procedures to accomplish the objectives, and the procedure for evaluating the degree to which the objectives have been achieved.

4. Provide for all instructional personnel to participate in the following three types of staff development activities within a five-year period: basic teaching skills (i.e., skills applicable to all subjects or levels), updating skills or knowledge in a specific subject or service area, and exploratory activities (i.e., activities without specific objectives).

5. Develop a system for accounting for teacher inservice work completed.

6. Provide a system for maintaining program records.

7. Provide a system for maintaining personnel records.

The emphasis in the criteria for approving master plans is upon the development of teacher education components directed toward specific teacher education objectives. Thus, school districts are encouraged to follow the model presented in Figure 1: to identify educational goals, to develop teacher education objectives relevant to these goals, to implement a teacher training program, and to evaluate the performance of teachers in terms of the teacher education objectives.

### *Teacher Education Programs in Colleges and Universities*

The procedures for administering the approval of teacher education programs in colleges and universities are basically the same as those for school district teacher education programs. As in the school programs, the institution conducts a self-study, a visiting team evaluates the program, and a recommendation is made relative to its approval. Approval for institutional programs is granted by the State Board of Education.

The standards for approving teacher education programs and the procedures for administering the standards are not intended to establish uniform programs of teacher education, but are, in fact, intended to encourage intelligent experimentation and pioneering in both the administration of institutions and in the actual programs of teacher education. In practice, however, the programs which have been approved have tended to follow the course by course regulations established for the certification of teachers. This is in spite of the fact that the regulations are intended to represent minimum standards rather than optimum standards for teacher preparation.

In carrying out its responsibility for administering the approval of teacher education programs, the State Department of Education is anxious to promote innovative programs which make full use of the resources of individual teacher education institutions and of the public schools with which they work. Institutions should not feel constrained to offer teacher education programs which merely duplicate certification requirements. Instead, they should base the design of their programs upon their own answers to questions such as the following:

1. What are teachers in a given area supposed to know, believe, and be able to do?
2. What kinds of experiences are most likely to foster the development of the desired knowledge, attitudes, and skills?
3. How can one tell when the teachers have attained the desired knowledge, attitudes, and skills?

The above questions parallel points made earlier in this chapter. They imply a much greater emphasis on the performance of teacher trainees rather than upon the exposure of those trainees to specific course content. To implement this approach, the State Department of Education allows institutions to select among three approaches in submitting teacher education curricula for approval. It is likely that an institution will request different types of approval for different curricular areas. That is, the curriculum for preparing one type of school personnel may be approved as "experimental," while the curriculum for preparing another type of personnel may be approved as "standard."

1. *Performance-Based Curricula.* The performance-based curriculum is a program with specific objectives and specific procedures for determining the extent to which the objectives have been accomplished. The objectives may be validated by either: (a) consensus of a panel of experts or (b) research evidence. Data should be available to document the effectiveness of the curriculum for accomplishing the objectives.

2. *Experimental Curricula.* Experimental curricula are directed toward the development and utilization of performance criteria. They should be designed to accomplish specific performance objectives. The objectives of the program should be validated either by: (a) consensus of a panel of experts or (b) research evidence. The program should be aimed toward specific performance objectives with specific procedures for determining the extent to which these objectives are accomplished.

3. *Standard Curricula.* Traditional curricula include course work substantially in agreement with the courses prescribed in the certification regulations. The visiting committee will review the content of the courses and ascertain that it is consistent with the generally accepted content of such courses.

## WHITHER TEACHER EDUCATION?

The answer to the question "Whither teacher education?" depends, among other things, upon which teacher education seeds receive cultivation. This chapter has described seeds being cultivated by the Florida State Department of Education. The Department is attempting to cultivate (1) the systematic evaluation of teaching performance, (2) a decision-making/decision-implementing concept of teaching, (3) the development of teaching technology, (4) the development of stronger school-college partnerships in teacher education, (5) the development of individualized teacher education materials directed toward specific objectives, (6) systematic planning to meeteducational manpower needs, and (7) initiative on the part of both school districts and colleges in developing teacher education programs directed toward specific objectives. Overall, the Department is attempting to cultivate a system which will make teacher education responsive to the actual needs of the schools. Consequently, if the system is effective in making teacher education responsive to the needs of teaching, the directions taken by teacher education will be determined ultimately by the directions taken by all of public education.

Whither public education?

# Chapter III

# Exploring the Uses of Television and Related Media in Teacher Education[*]

## OVERVIEW

Television was being used more as a tool for mass education than a medium for individual or small-group instruction. States were being blanketed with educational television systems, and college classes were viewing videotape recordings in much the same way that their predecessors had used educational sound films.

Such was the climate in 1965-66 as the M-STEP staff assessed the state of the art of video media in education.

Dozens of institutions, however, were making dramatic advances in finding innovative uses for video media in teacher education programs. The portable videotape recorder, in particular, offered intriguing possibilities for use in laboratory experience classrooms. Although a relatively new development in the burgeoning field of educational technology, the videotape recorder promises to be a powerful technological aid in the future of teacher education.

### *Video Processes in Teacher Education*

Projecting the tremendous potential of video processes in the preparation of teachers, M-STEP moved to implement one of its primary goals: an intensive exploration of the uses of television and related media in preservice and inservice teacher education. To fulfill its goal of media experimentation, the project was committed to three specific tasks:

1. To learn what was being done in adapting video media to teacher preparation programs in American colleges and universities;

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[*] **By the Director and Staff.**

2. To search for potential contributions of video processes to unmet needs in teacher education;

3. To create, use, and evaluate sets or series of videotapes and films of exemplary teaching patterns.

### *Achieving the Media Goal*

During the pre-project planning sessions, the staff determined that the most effective way to achieve its media goals was through a division of labor. Since South Carolina and Utah already had extensive educational television facilities when M-STEP came into being, representatives from these two states agreed to spearhead exploratory activities in video processes in teacher education.

As the two states worked together through joint committees and cooperative activities, they considered the developing needs of the member states of the project, using them as resource agencies. Thus, each of the states played a vital supportive role in the media experimentation activities of South Carolina and Utah and, consequently, each was able to derive benefits from the video aspects of project operation.

In addition, each of the five states - Florida, Maryland, Michigan, Washington, and West Virginia - was equipped with a videotape recorder identical to the units used by South Carolina and Utah. Thus, each of the states could use, evaluate, and circulate the videotapes produced by the South Carolina and Utah programs. Some of the states presented conferences and clinics with the assistance of consultants from South Carolina and Utah; others benefited from the knowledge and experiences of the two lead states in media by conferring with their representatives on a number of issues.

Needless to say, M-STEP has aspired to interest and to reach teacher educators, administrators, and the general education community throughout the nation by the widespread dissemination of its experiences and findings. Though South Carolina and Utah were the foci of the video media exploration, by no means were the benefits of the project limited to these two states.

## South Carolina's Program

### *Videotapes*

Particularly well equipped to produce videotapes because of its existing ETV facilities and experiences, South Carolina produced a series of ten videotapes as a part of its M-STEP program. Dealing with significant aspects of student teaching. the tapes are intended to enrich and complement the most effective patterns and procedures prevalent in teacher education programs today. Each tape is a complete entity and may be used at any appropriate stage in the preservice program of prospective teachers. Accompanying study guides are available. (See the Appendix for titles and descriptions of individual videotapes.)

### *Statewide Conferences*

On June 22, 1967, the State Department of Education, Division of Teacher Education and Certification, hosted a statewide conference on the uses of television in teacher education. The conference was an outgrowth of project activities in South Carolina.

Adopting the theme"Utilizing Television in Teacher Education," the one-day video institute involved representatives from thirteen of the state's teacher preparation institutions and public school personnel. In bringing together these persons responsible for teacher education, the institute proposed "to explore ways television and videotapes can be used in the preparation of teachers and to examine different types of television equipment currently on the market that can be employed in the classroom."

The visual presentation for the institute was a sixty-minute videotape entitled *Using Video Processes in Teaching* (see Appendix). Produced by South Carolina, the tape is structured around the ten uses of television in teacher education identified by *Television and Related Media in Teacher Education.* After viewing the tape, the conference delegates met with representatives from video equipment companies for instruction and information on equipment that could feasibly be used in college classrooms throughout the state.

One of the direct outgrowths of this video institute was the request that four to six similar regional institutes be held across the state. Realizing that a far greater number of educators could be reached through such meetings, the staff planned six one-day video institutes throughout the state during the first two weeks of December, 1967. These institutes were held on college campuses and involved college and public school personnel engaged in preparing teachers.

### *An Improved Image*

Perhaps the most far-reaching result of the video institutes is the evolving improved image of teacher education, particularly that phase called "student teaching." A constant dialogue, both interstate and intrastate, has been fostered and stimulated, centering around the need for improving the laboratory experiences of teachers. Through its activity in the area of videotapes, South Carolina has offered to South Carolina educators one possible method of complementing the existing practices in teacher preparation programs.

## Utah's Program[1]

### *Micro-teaching Experiments*

Conducted through the cooperation of the State Department of Education and several Utah universities, Utah's micro-teaching project, directed toward the identification of behavioral objectives in the teaching process, utilized videotaped peer-teaching sequences in the production, evaluation, and coding of peer-teaching episodes. The micro-teaching technique, defined as a "miniature teaching situation under controlled conditions,"[2] uses the videotape recorder as the integral tool in the process.

The student teacher is videotaped while he teaches a short lesson—generally not longer than five or six minutes. The tape is then played back, and the lesson is criticized and evaluated by the supervising teacher, the student teacher, and, possibly, his peers.

The student teacher may reteach immediately, incorporating changes which have been suggested by his critics. His "micro-class" may be his peers, or it may be a group of pupils, usually four to six.

Major advantages of micro-teaching are (a) its concentration on a single manageable teaching process or concept at a time; (b) the ease of thorough analysis, diagnosis, and suggested remediation; and (c) the opportunities provided for immediate reteaching and strengthening of processes discussed during the evaluation period.

### *Videotape Production*

Two institutions which were actively involved in micro-teaching experiments under the Utah M-STEP program—Brigham Young University and the University of Utah—have produced selected videotapes dealing with various facets of the micro-teaching process.

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[1] Also see Chapter IV and VI of this Volume.

[2] Utah M-STEP, *The Use of Video Processes in Teacher Education*, Monograph No. 1 (Salt Lake City: Utah State Board of Education, 1967), p. 1.

In conjunction with Utah's Analysis of Teaching Project, Utah State University produced a series of eight 20-minute videotapes in various secondary school subject-matter areas. Designed to illustrate examples of direct and indirect teacher influence (as defined by Flanders in his interaction analysis system), the tapes have been used and evaluated in a problems seminar for student teachers.

The College of Southern Utah, as part of its program in the Recorded Classroom Episodes Project, prepared a series of videotaped classroom episodes designed to provide on-the-job training in the use of videotapes. Directed to professional personnel working with student teachers, the series was prepared essentially to discover whether or not video processes can reduce the amount of pre-student teaching laboratory experience in actual classroom situations.

Videotapes on the dynamics of team teaching have been produced under the direction of the Weber State College's Team Teaching Project. A complete list of video materials for teacher education produced by Utah is given in the Appendix of this volume.

## PROBLEMS ENCOUNTERED

The problems met by the states in developing their video programs contain elements which may interest state planners in any part of the country.

In South Carolina, the problems were related mainly to operational aspects of the project. The first difficulty encountered was the need to translate the broadly stated objectives into specific objectives and to plan for the project activities relating to these specifics. This problem was solved by the cooperative effort of the State Steering Committee and the M-STEP staff members.

The dissemination of produced television resources was the second troublesome area. Although the state ETV network was most cooperative in broadcasting the programs when broadcast time was available, the air time allowed was not always the most convenient hour for the colleges. This problem, in turn, has increased the interest in portable videotape recorders, and it is foreseen that each institution will have at least one portable VTR in the near future. The acquisition of this equipment by the colleges and the willingness of South Carolina ETV to make copies of videotapes for use on the college equipment has helped to overcome the dissemination problem.

The third problem—insufficient staff—is linked to the dissemination issue. Although many publications which list and discuss project resources have been prepared, personal visits by staff members to each institution involved in student teaching would have been beneficial, notes a spokesman from the South Carolina State Department of Education.

During the early stages of project operation in Utah, the College of Southern Utah reported certain difficulties.

Some problems were inherent in the equipment itself, while others were due to the inexperience of the staff. The fact that the project (assigned to the college) was completed ahead of schedule, however, is testimony in and of itself that it is feasible to use VTR equipment in the classroom without a highly trained technical staff.[3]

The most serious problems identified by the College of Southern Utah were:

- The difficulty of faithful reproduction of classroom sound. Conditions of the typical classroom do not approach those of the studio for sound absorption, and placement of microphones for best room coverage presented a problem with equipment available. Video difficulties and lighting problems occurred during the early stages.
- Maintenance of equipment caused some difficulty, especially in cleaning the recording heads of videotape recorders.
- The lack of availability of technical repair service from the equipment suppliers constituted a serious problem.
- Editing videotape was extremely difficult when early models of the VTR were used.

Final reports from Utah released in 1969 reported only one technical difficulty: lack of compatibility of videotape recording and playback equipment.[4]

## EVALUATION OF VIDEO PROCESSES IN TEACHER EDUCATION

What observations can we now make about the effectiveness of television and related media in teacher education? What predictions can we make for the future of video processes in teacher education?

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[3] The Utah State Board of Education, *The Use of Video Processes in Teacher Education.* Utah Monograph No. 1 (Salt Lake City: Department of Education, 1967).

[4] *Final Report of the Multi-State Teacher Education Project in Utah* (Salt Lake City: State Board of Education, 1969).

The fact must be reiterated that the project was designed as a developmental agency, concerned with utilizing innovative procedures and techniques deemed worthy by professional groups. Operationally, the task of the project was to use discriminatory judgment in the selection of new techniques which would be incorporated into its state programs, to be inventive in the design and application of processes that can apply to teacher education, and to organize state and interstate systems whereby professionals in teacher education—through communication, collaboration, and creative group thinking—can assess the efficacy of current patterns and adopt or evolve new trends.

### *What Teacher Educators Are Saying*

Personnel in the M--STEP states believe applications of instructional media can exert a strong influence on the improvement of teacher education. In referring to the effect of media on programs of teacher education, T. H. Bell, State Superintendent of Public Instruction in Utah, writes:

> Evidence of progress is already apparent. Micro-teaching and other uses of the videotape recorder are indicative of significant changes that are taking place in the preparation of teachers. But we have witnessed only the beginning! Seeds have been sown which could result in a major overhaul of teacher education programs.[5]

N. Blaine Winters, Administrator, Teacher Personnel, Utah State Board of Education, states:

> The M-STEP Project . . . has had a great effect upon developing new practices in student teaching in this and the other states. The use of instructional media, especially television, has been explored and accepted as an important factor to be used in improving student teaching.[6]

George W. Hopkins, Director, Office of Teacher Education and Certification, South Carolina State Department of Education, says:

> The M-STEP Project has had a great impact upon student teaching in South Carolina. It has caused a focus on new ways to attain the objectives of student teaching. The use of television, closed circuit broadcast, and videotapes has been extensively explored. All

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[5] Monograph No. 1, *op. cit.*, p. i.

[6] *Ibid.* p. ii.

colleges and universities now use one or more of these in their teacher preparation programs.[7]

### *What Research Studies Are Showing*

Dr. Lillian C. Smith has conducted a research study dealing with the effectiveness of micro-teaching in the preparation of elementary teachers.[8] Regarding the role of video media in the micro-teaching process, Dr. Smith says that ". . . seeing oneself in a teaching situation enhances the ability to critically evaluate and constructively modify one's teaching actions." The fact that the experimental (micro-teaching) group showed gains over the control group in five of the six teaching skills investigated in the study "supports the notion that a desired teaching behavior is more easily produced after viewing one's own teaching performance," observes Dr. Smith.

Some of the significant conclusions of the Smith study seem to be:

- The use of micro-teaching is justified. If used in conjunction with other effective procedures which are known to influence teaching behavior, the results could be highly encouraging.
- Students who took part in the microteaching process made larger gains than the control group in mastering questioning techniques for gathering data.
- A moderate degree of superiority was developed by the experimental (micro-teaching) group in asking probing questions, inferential questions, inquiry, and in verbal and nonverbal reinforcement. Students who were not involved in micro-teaching showed deterioration in four of the six skills studied.

In noting that most studies of micro-teaching have been concerned with secondary or college teaching, Dr. Smith commented that". . . a technique which seemingly has so much potential ought also to be useful in elementary teacher preparation where skills and mastery of content are so interdependent."

The Smith study is reported in full in a later chapter of this Volume.

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[7] South Carolina State Department of Education, *Teacher Education Resources* (Columbia: South Carolina State Department of Education, March 1968).

[8] Lillian C. Smith, *A Study of Micro-Teaching in the Preparation of Elementary Teachers,* MS. (Baltimore: Multi-State Teacher Education Project, 1968).

Dr. Earl Harmer reports on developments in micro-teaching at the University of Utah during 1967-1968, after more than two years of trial.[9] Dr. Harmer's observations and recommendations follow:

- "Micro-teaching" is short teaching lessons which are frequently video recorded for immediate playback and analysis. The purpose is to provide teaching skill-training for preservice teachers. It is also assumed that certain positive educational attitudes are formulated within the process of micro-teaching.

- The primary development during the 1967-68 school year in the concept of micro-teaching has been the utilization of conventional public school pupils in addition to the peer teaching program which was common during the 1966-67 school year. Certain advocates of micro-teaching in teacher education (Dwight Allen for example) have consistently argued for the micro-teaching experience to be done only with conventional public school pupils. Until this past year, it has been the position to the University of Utah that the gains accrued from micro-teaching are realized as well with peer teaching as with "real" students. However, during this past year increased numbers of conventional age public school pupils have been utilized and this procedure would now appear to be an established pattern of micro-teaching at this institution.

- The support of M-STEP funds has undoubtedly been the decisive factor in the motivation for micro-teaching curriculum development and the acquisition of equipment.

- Micro-teaching procedures are an established part of the teacher education program at the University of Utah.

- All personnel with the Department of Education are conversant with micro-teaching techniques and skilled in the use of V-R equipment.

- Micro-teaching techniques are being used in inservice education with local school districts.

- The use of "real" students has been added to, but has not replaced, peer-teaching as teaching subjects in the micro-teaching sequence.

- Numerous departments outside the College of Education have either utilized micro-teaching or expressed an interest in potential use.

Dr. Harmer's report will be found in a later chapter in this Volume.

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[9] Utah State Board of Education. *op. cit.*

## *A Group Assessment of the Utah Program*

During the Utah state conference in May, 1957, an evaluation was made of Utah's M-STEP project. Participants in the conference included representatives from Utah colleges and universities, local school systems, professional teachers organizations, the State Department of Education, and delegates from other states.

When asked how M-STEP had influenced teacher education programs in Utah, participants asserted that the project had encouraged and effected the use of videotape and other media in teacher education, as well as the adoption of micro-teaching as a technique. The project has made available videotapes, films, and other materials to extend laboratory experiences and has stimulated earlier orientation of prospective teachers through videotaped episodes.

Participants predicted that project efforts in Utah would result in additional innovative and creative uses of television, both in preservice and inservice teacher education.

Asked what the project could now do to improve teacher education, the group suggested the following activities related to video media:

- Develop a descriptive list of behavioral objectives (teaching tasks).
- Make available on videotape models of various teaching behaviors for analysis and comparison.
- Produce single-concept tapes or films and simulated open-end tapes.
- Plan media workshops for college supervisors and cooperating teachers.

## *South Carolina Reports*[10]

A major condition which led to the success of the project in that state was the recognized need on the part of the 22 teacher preparation institutions for more and better communication and exchange of information. Under the auspices of M-STEP, a dialogue was begun to assess the educational needs of student teachers, in particular, and to define the joint role of college and public school personnel in meeting these needs.

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[10] South Carolina State Department of Education. *Multi-State Teacher Education Project–Final Report* (Columbia: The Department, 1968).

A second condition which facilitated M-STEP success was the desire among professional educators in South Carolina for the State Department of Education, and most particularly the Office of Teacher Education and Certification, to assume a strong leadership role in student teaching. Through M-STEP "commitment to improvement," the State Department of Education is assuming the role of providing effective leadership and coordination in teacher education. Constructive interchange and sharing of ideas and practices in the training of teachers are being evidenced more strongly each day as the State Department of Education moves away from its time-honored position of "regulator" and assumes its rightful role of dynamic leadership, coordinating the efforts, programs, and thinking of the 22 colleges that prepare teachers in the state.

A third condition related to the technological facilities of educational television available to M-STEP. The education and production departments of South Carolina ETV wholeheartedly supported the project in every way.

A further condition relating to success was—and still is—the acute shortage of qualified teachers in South Carolina. [11] The need, therefore, to recruit enrollees in student teaching programs and well qualify them for their careers has been intensified.

A fifth condition was the increased interest, on all educational levels, in the use of television in education. The traditional approach to the classroom is being joined by television instruction in both preservice and inservice teacher education.[12]

### *An Adventure in Cooperation*

In South Carolina, the Multi-State Teacher Education Project is a cooperative involvement and effort of those persons most intimately involved in teacher preparation. It draws on the combined and individual stregths, skills, and imagination of the State Department of Education, the Educational Television Commission, public and private colleges that prepare teachers, and the public schools, who share in the responsibility of improved teacher education programs and receive the products of these programs as the teachers of tomorrow.

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[11] South Carolina State Superintendent of Education, *Annual Report, 1965-66* (Columbia: South Carolina State Department of Education, 1966), p. 83.

[12] In 1967, over 2,000 South Carolina teachers enrolled in inservice teacher education projects which used television as the medium of instruction. The projects were sponsored by the Office of Teacher Education of the State Department of Education.

## CONCLUSIONS AND RECOMMENDATIONS

The assessment by South Carolina and Utah of M-STEP activities in video processes in teacher education, i.e., what has already been achieved as well as what needs to be done, will have implications for all states who plan to initiate or to accelerate video programs in their teacher education institutions.

In this context, we cite some of the findings of the Recorded Classroom Episodes Project conducted at the College of Southern Utah in Cedar City.[13] The project goal was the production of ten recorded classroom episodes; implied in the goal was the idea of probing the potential of videotape recorders in teacher education. The following findings can serve as general advice for program planners:

- *Teachers Can Operate VTR Equipment.* An extensive corps of technical experts is not necessary to produce the type of recorded episodes developed in this project. However, teachers cannot expect to add this function to their present schedule without some time compensation. The planning, arranging, actual taping, and editing and dubbing require considerable time. Mature college or high school students might be trained to do some of this work, but it must be recognized that videotaping is very demanding in time. Teachers should not be expected to do an adequate job in this area if it is merely added to their present load.

- *Inexpensive VTR Equipment Can Be Used.* A basic unit consisting of a recorder, a camera, and a monitor can be purchased for approximately $1,500. As the use of this medium is gradually adopted by more and more agencies, the cost will probably be reduced. An expenditure of even $1,500 for such equipment should be within the resources of most institutions. Varying aims and objectives may require that additional items be added to the basic unit.

- *The One-Half-Inch VTR Unit Should Be Seriously Considered.** In terms of cost of the recording tape alone, budget-minded administrators should give the one-half-inch recorder serious consideration, for it is much less expensive than the larger tape unit. In addition to this economy factor, smaller tape equipment is more portable, less complicated to operate, and less expensive to purchase, maintain, and repair. The quality of the one-half-inch tape seemed to be equal to that of the larger tape. For purposes of this project, the smaller tape appeared to have a greater all-around utility. It is our opinion [ the researchers] that one-half-inch will become the standard for classroom use, even though CCTV networks seems to have more or less standardized on the use of larger tape. Thus, there well may be two "standards" in size of tape to be used. In our estimation, the advantages of the one-inch tape are not distinct or significant enough to offset the advantages of one-half-inch tape mentioned above. We also feel that industry must make compatible VTR units. Audiotape manufacturers faced this problem in developmental stages and solved it; it is imperative that a standard be established for VTR's. In some instances tapes are not even interchangeable on units produced by the same manufacturer. Tapes produced on one-half-inch VTR's should be capable of being played back on any other half-inch VTR.

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[13] The Utah State Board of Education, "Production of Recorded Classroom Episodes at the College of Southern Utah," *The Use of Video Processes in Teacher Education,* Monograph No. 1 (Salt Lake City: State Board of Education, 1967), pp. 9-25.

*As of early 1969, we are advised that one-fourth inch VTR units are ready for release by the trade. [Ed.]

- *Dubbing Is An Accomplished Fact.* A source of anxiety at the outset of this project was concern about the quality of reproduction when videotaped material on one-half inch tape was dubbed to one-inch tape. The conclusion of this experiment is that such fear is groundless. The process was rather easily and effectively accomplished. While there may be some loss of picture quality when dubbing is employed, such loss is to be expected in virtually any situation where an original is being copied, whether in art or in printing or in videotaping. Furthermore, it is doubtful that the amount of quality loss can be precisely measured. Some experts have predicted that a 25 per cent loss can be expected, but we doubt that such can be observed in the process described in this report. While the quality of the tape reproduction may not meet broadcast or professional standards, it certainly is effective and adequate for normal classroom use.

- *Audiovisual Education Classes for Prospective Teachers Should Include Instruction in the Use of Videotape Equipment.* Prospective teachers should have an opportunity to learn and become proficient in the operation of videotape equipment. This type of learning could most profitably be incorporated in most audiovisual courses of instruction, along with the traditional study of the operation of motion picture projectors, tape recorders, etc. The readjustment necessary to include videotape equipment in such courses would be minimal once the equipment had been acquired.

- *Inservice Programs Should Be Organized to Help Practicing Teachers Become Proficient in the Use of Videotape Equipment.* The classroom teachers who worked with this project were eager to learn how to use

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this videotaping equipment. Without exception, the climate of the classrooms was most enthusiastic; and the students, as well as the teachers, were obviously stimulated and challenged. The teachers seemed to be especially eager to operate the equipment themselves with no one else around to see the results of their teaching! Practically every teacher commented favorably as to how he could effectively use such equipment to improve the quality to his teaching. As an instrument for inservice growth, the videotape recorder has great potential.

- *Salesmen and Sales Agencies Should Do More Than Sell–They Should Provide Service.* Operating VTR equipment is one thing. Repairing and maintaining it presents a serious, complicated problem. Schools which purchase such equipment should be assured of the availability of competent and prompt maintenance and repair service.

- *VTR Units Can Be Used to Reduce or at Least Supplement Laboratory Experiences in Teacher Education.* Time is too limited in the project to establish statistical evidence as to the usefulness of VTR units in teacher education. However, we have a firm conviction, after having had the experience, that it can be effective in preparing the college student for the actual classroom situation.

The response to M-STEP activities in instructional media reveals that the project has illuminated a vital need in teacher education. While many states and institutions and individuals have undoubtedly felt this unmet need, it has possibly not even been recognized in other areas and by other persons.

The video processes have great potential in improving current teacher education practices has been established by exploratory programs; that television–and particularly the portable videotape recorders–will become integral tools in teacher education cannot be doubted. Technology and education are merging into a dynamic relationship called "educational technology," and this fusion is gaining momentum every day.

The project has played the role of catalyst–it has paved the way by experimenting with a small sampling from the teacher education community. Now the states–through their individual departments of education, teacher education institutions, public schools, and all other groups involved in the training of teachers–must assume active leadership and coordination roles in one of the most important contributions they can make to society–the effective preparation of teachers for tomorrow.

# Chapter IV

# Television and Related Media in Teacher Education - Some Exemplary Practices*

TOPICS

Introduction
Closed-Circuit Television as a Substitute for Live Observations
Using Videotapes in Directed Observation
Videotapes in Instruction: Advantages, Applications, and Pitfalls
Observation Television at Hunter College
Use of Videotaped Materials as a Substitute for Classroom and Child Group Observations
Using Videotape Activities in Teacher Education
The Use of Videotapes in the Preparation of Elementary School Teachers of Arithmetic
Micro-Teaching in the Training of Teachers: Progress and Problems
Videotape Techniques at Stanford University
The Use of Videotape Recording in Teacher Education
Selected Research on Micro-Teaching
Videotapes in Simulated Experiences and Supervision in Counselor Education
Building a Simulated Laboratory for Teacher Preparation
Project Immortality
Georgia's Inservice Education Program in Reading
Mathematics Inservice Training in Georgia via Television
Television and Teachers Inservice
Telecourses for Inservice Education: Old Hats and New
Amplified Telephone as a Teaching Medium: Description of an Inservice Science Seminar
Recording and Evaluating Progress of Student Teachers at the University of Utah

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*Compiled by Howard E. Bosley, Director, Multi-State Teacher Education Project, and Harold E. Wigren, Educational Television Consultant, National Education Association, and first issued as a bulletin by the Multi-State Teacher Education Project.

## INTRODUCTION

The widespread fusion of technology and education is rapidly becoming more the rule than the exception in our nation's schools and colleges. Innovative practices which employ with considerable sophistication the use of television and other technologies are to be found in increasing numbers at all levels of education. These practices indicate the growing willingness—and determination—on the part of educational leaders to make creative applications of technology in the solution of instructional problems.

The purpose of this Chapter is to bring to the attention of the educational community a selected number of experiments designed to utilize one particular technology—television—in the achievement of specific instructional objectives in the professional education of teachers.

There is now considerable evidence to document the fact that television can be used with great effectiveness for a wide variety of instructional tasks, ranging from classroom instruction, pre-school instruction for young children, out-of-school instruction for youth, the fundamental and basic education of adults, the training of industrial workers for new jobs in an age of automation, and the pre-service and in-service education of teachers. In the judgment of many educational leaders, however, the greatest promise for instructional television lies in this latter category—i.e., its ability to offer professional growth opportunities for teachers. In fact, its use in teacher education has perhaps been educational television's "finest hour" in its brief history to date. With the advent of closed circuit television facilities, videotapes and eventually videorecords, there is every reason to believe that televsion's future in this area will be even brighter than its past. Its use will be extended and expanded beyond the education and re-education of teacher personnel to include also professional growth opportunities for principals and supervisors, as well as teacher interns and auxiliary school personnel.

Unquestionably, television will play an expanding role in education in the years ahead. Its use, however, will remain only as creative as the imagination of its user can make it. Television affords us not so much a new dimension in instruction as it offers a new way of approaching old and familiar problems. It offers an unconventional way of dealing with conventional teaching and learning situations.

There is also mounting evidence to indicate that the future of television in instruction may not be at all like its present use. As we now know television, it is all too often a *teaching* medium designed primarily for disseminating lectures to large classes. The possibilities of its use as a *learning* instrument by students in independent learning situations has been relatively unexplored. As television technology itself becomes more sophisticated, there will hopefully emerge more differentiated and less stereotyped uses of the medium. The practices highlighted in this publication seem to forecast a new direction in television's use—toward more individualized and small group uses of the medium. These practices place emphasis on the use of television as a research and diagnostic instrument rather than as a dispenser of information in mass audience situations. The use of videotapes and videotape recorders hold the promise of turning television into a much more flexible teaching and learning instrument than it has been up to now.

The contributors to this publication are to be congratulated for exploring new ways of using television in teacher education. It is to be hoped that these examples will serve to spark other creative uses of the medium to improve teacher efficiency and competence, as well as to increase immeasurably teacher insight into instructional-learning problems.

## CLOSED-CIRCUIT TELEVISION AS A SUBSTITUTE FOR LIVE OBSERVATIONS

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Observations of child growth and behavior, teaching methods, classroom organization and management constitute a major factor in the preservice education of the teacher at the College of Education of the University of Florida. In 1964 a closed-circuit television system was installed between the College of Education and the laboratory school one-half mile away.

One of the main purposes of the closed-circuit system was to decrease the student observation load at the laboratory school. During the year preceding installation of the system, 1963-64, eight teacher education courses had demanded in excess of 20,000 hours of student observation in the laboratory school. Many hours were spent coordinating observations, and attending to problems associated with handling such large numbers of students.

The closed-circuit system connected nineteen originating stations of the laboratory school with ten receiving stations (classrooms) in the College of

Education. Two vidicon cameras were mounted on top of a portable, rack-mounted amplifier. One camera was a fixed focus with a nonmovable mounting. The second camera had an adjustable focus, azimuth and tilt, and adjustable zoom. An extra length (150 feet) of extension cable made possible the use of portable amplifiers and cameras outside of the nineteen originating stations.

Remote controls that were relatively simple to operate were installed in the College of Education building. These remote controls allowed the professor directing the observation to operate the cameras and thus eliminate the need for a central studio and cameramen.

As the professor operated the cameras, he selected and directed the observation to those aspects of human behavior or classroom activity that were relevant to his class of observers. To increase flexibility of the observations, a microphone attached to the remote panel provided for "talk-back" communications as a supplement to the observation. Provision for a videotaping allowed taping for classes and observations that met after laboratory school hours.

The first course in professional education is a course in human growth and development. It is designed to acquaint students with a basic understanding of the nature of the human behavior. Students are required to make observations of children and youth at various educational levels. Each student is expected to gain a required skill in objectivity of reporting behavior and the subsequent analysis of various behavior patterns. Other college classes may observe teaching methods, classroom management, and classroom organization.

## MAJOR ASSETS

Various benefits other than the obvious one of a reduction of the student observation demands in the laboratory school were possible. Various professors had varying purposes for which observations were used in their courses. Some of these are listed below.

*Training for Objectivity in Observation.* Early in the term students observed a child for a period of time and then prepared write-ups of the observation. Several such exercises were used for students to obtain the desired skill necessary before the student moved to the next stage of making an analysis of the observed behaviors.

*Overview of School Programs.* Students viewed scenes from various levels, kindergarten, elementary, junior high, or senior high school, as an introduction to the school environment and the scope of a total school program.

*Invariability of Content.* Students and professors have a common experience for interpretation and discussion of the observation. Discussion of observed behaviors, teaching methods, etc., is not restricted to the ability of the student or professor to recreate the events that took place during the observation through written and/or oral reports. Videotapes provide optimum opportunity in recreating events for replay during class discussion.

*Vignettes.* Through videotapes specific behavior patterns, i.e., teacher-pupil, peer, and individual are available for use in classroom presentations. These vignettes provide the instructor with material on specific experiences which might not be available to the student if left to chance during an actual observation.

## MAJOR PROBLEMS

*Quality of Sound Signal.* The laboratory school was not designed with the acoustical conditions necessary for transmission. Observers had difficulty in understanding the audio portions of the program. Microphones were not sensitive enough to pick up signals from all parts of the room or were so sensitive that extraneous sounds from within and without the originating classroom interfered with the receiver's understanding. This problem alone has contributed more to the lack of success of the venture than any other factor. Buildings designed with hard floors, walls, desks, etc., are not the best originating stations.

*Technical Limitations of Professors.* Most college professors are not skilled technically. The needs for even minor skills to operate the remote controls baffle professors and cause reluctance to use the equipment. Demonstrations by professors who are successful in their use of television are helpful in encouraging others to use television in their classes.

*Technicians.* Educational innovations often overlook the need for experts to maintain the system. Manpower to repair and relocate equipment is essential.

*Editorial Work from Tapes.* This editorial work requires time and some skill. The editor must be skilled in recognizing activities and selecting portions of the tape that illustrate these desired activities. Many hours of reviewing tapes are necessary to obtain the most adequate illustrations.

*Viewing in Absence of the Instructor.* The presence of the instructor is considered most important. When the instructor and students share the experience, there is less likelihood of misinterpretation on the part of the student observer. Clarification of content is much easier and more accurate.

# USING VIDEOTAPES IN DIRECTED OBSERVATION

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The purpose of this article is to describe and to evaluate our efforts in using videotapes in the directed observation phase of teacher education.

Students majoring in elementary education at this University complete two sequences of Directed Observation in the laboratory school, twelve hours during the freshman year and fifteen hours in the sophomore year. Observation is conducted from the observation corridor where University students watch through one-way glass and listen to the classroom activities being transmitted through earphones or overhead speakers.

Closed-circuit television is used to supplement the corridor in Directed Observation. The increased enrollment and scheduling problems made it extremely difficult to accommodate all the students in some sections in the observation corridor. This problem was most troublesome with the sophomore groups. Sophomore students had observed grades one through six rather extensively. All of this observation had been broad and general in nature.

In making plans for an effective sequence of observation lessons on the closed-circuit television some important generalizations emerged from the discussions. The decision was made to use videotapes in order to focus the attention on more specific teaching activities: the role of the classroom teacher, classroom facilities, curriculum considerations, and a structured overview of grade levels from one through six.

A structured, methodological approach was utilized in using the videotapes in Directed Observation. One week preceding the showing of any videotape the laboratory school teacher came to the observation class and presented a brief description of the grade level to be observed, her philosophy of teaching, and her experiences in planning for the taped material. This was followed by a discussion and questions from the University students. During the subsequent observation class session, the videotape was shown with the laboratory teacher present to make comments and to answer questions about the taped lesson. The University students are neither asked nor encouraged to be "critical" in their observations. They are encouraged to ask questions, and the positive approach is emphasized.

Most of the videotapes utilized in the sophomore group observation were focused on some specific activities in teaching. One tape emphasized the teacher's role on the first day of school in a second-grade class. The tape depicted the children during the first forty or forty-five minutes of the new school year. What specific problems were encountered by the teacher in this situation, how were the problems handled, and what was the reaction of the children on this first day of the school year? This tape evoked much interest and enthusiasm, an experience in depth for prospective teachers.

A videotape emphasizing Christmas activities attempted to capture the reactions of first-grade pupils approaching the holiday season. Also, specific subject area lessons were put on tape: mathematics, social science, and science experiments. The science experiments tape attempted to develop an awareness of effective use of laboratory techniques and equipment at the fifth-grade level.

One videotape emphasizing instruction in a large group situation should be mentioned. Two sixth-grade classes were combined for a modern mathematics lesson. The focus was on the team approach and other aspects of grouping. Here it was possible for the student in observation to see the reactions of pupils in a different setting from the self-contained classroom.

By videotapes it was possible for the observation students to observe pupils on the opening day of school in September and then to observe the same class towards the end of May. The comparison made an excellent study for prospective teachers to test their perceptions of children, to observe growth patterns, and to sharpen their understanding of what is involved in working with children in the classroom.

Used in the manner described above, these videotapes, it was felt, brought an awareness of and some understanding of classroom techniques and activities in a meaningful way to the prospective classroom teacher. Because of scheduling difficulties, it could not have been possible for sophomore students in observation to observe most of the activities described except by videotape and closed-circuit television.

The School of Education staff members closely affiliated with Directed Observation point out numerous advatages from using videotapes. A more flexible sequence of observations is possible. Special school activities can be taped and stored for viewing at an opportune time. Likewise, the laboratory teacher can plan for taping in the classroom specific activities which she feels will make an important contribution to the observation classes. Finally, the videotapes make it possible to conduct effective observation in a large group setting, an important consideration with the increasing University enrollment. The tapes have enriched the observation program and are an important supplement to the excellent observation corridor.

Some problems have been encountered in using videotapes. With one television camera it is not possible to observe the total classroom. The prospective teacher can see only a limited degree of interaction between the teacher and pupils. The teacher is in focus, but only a small number of pupils are visible. Additional cameras in the classroom would correct this difficulty.

The problem of sound effects in the classroom is a serious problem. Carpeting on the floors is a must to keep down the distractions from noises of moving chairs, desks, and other equipment.

A few of the taped lessons give the impression that uppermost in the mind of the laboratory teacher was the fact that the class was being televised. The lesson was taught for the observation students. Undoubtedly, this is a human tendency and one that can be overcome with continued experience in closed-circuit television and expert guidance from those involved in the program.

To this writer, the taped lesson does not seem to duplicate completely the classroom situation. Some changes must be recognized. Children do react to a television camera in the classroom. Some subtle teaching techniques must be utilized to compensate for this. Just as the children grow and develop, so too is using television in the classroom a developmental process. Children and teachers alike learn to live with the television camera and fascinating results can be secured in videotapes for use in Directed Observation.

Formalized evaluations of our efforts in this medium have not been attempted. The feedback coming to this office has been very favorable. The members of the elementary staff are enthusiastic about videotapes as a supplement to the observation corridor, not as a replacement for it. Elementary education students likewise seem enthused. They report interest in the new dimension in observation.

Our efforts thus far in using videotapes are only a beginning in what appears to be exciting new dimensions in teacher education. The self-appraisal process for student teachers, recording progress of student teachers, providing instruction in the skills and techniques of teaching, and micro-teaching make up but a partial listing of potential activities being discussed for use in the future.

# VIDEOTAPES IN INSTRUCTION: ADVANTAGES, APPLICATIONS, AND PITFALLS

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The use of videotapes in instruction is increasing for every level of instruction from preschool through graduate study. Technological developments and cost reductions are such that it will soon be possible for the smallest school to include videotape recording equipment in its budget. This is all the more striking since just a few short years ago only the largest commercial television stations could afford to make a recording of a television signal.

I would like to note some of the advantages of videotape in the instructional setting, list some of the instructional applications at The University of Michigan, and then conclude with a word of caution to those who anticipate the utilization of videotape.

## ADVANTAGES

One of the major advantages of videotape is the capacity for immediate playback. This feature not only provides an instant and accurate review of a student's performance, as in the case of practice teaching sessions or instruction in public speaking, but also allows for an immediate technical check of the material recorded.

Other features of videotape are similar to those of audiotape. Among these are the economies possible by erasing and reusing tapes and the capacity for editing.

A final advantage of videotape concerns its adaptability to future technological aids. Today's instructional videotapes should be fully compatible with the computer-based storage and random-access retrieval systems of tomorrow.

## INSTRUCTIONAL APPLICATIONS

At The University of Michigan, videotape is employed by a number of academic disciplines, including Teacher Education. Here is a brief summary of some of these uses, listed under categories of interest to those who train teachers.

1. *Student Teacher Progress and Self-Appraisal.* Our School of Education faculty has used videotapes to record students in "microteaching" episodes, full-length teaching sessions, and guidance interviews. Now, a student does not have to rely on the memories of his supervisors but has an accurate aural-visual record of his performance. With videotape, the faculty member is able to conduct his critique by reference to a recording of the actual methods employed by the students. With a series of videotapes of the same student, progress, or the lack of it, can be fully documented.

2. *A Substitute for Immediate Observation.* Direct observation of teaching, interviewing, or therapy is commonplace in many areas of higher education. However, anyone who uses such observation in his teaching has experienced the difficulties in providing enough observation space and in scheduling observation periods. In our University, the English Language Institute and Children's Psychiatric Hospital make extensive use of live television and videotape to solve their space and scheduling problems. In both cases, unobtrusive, remote-controlled television cameras provide less distraction than observers physically present in the classroom, and less inconvenience than crowding observers into a small room equipped with one-way mirrors. Also, with videotape observation sessions can be scheduled at a convenient time for the observers and not necessarily at the actual event.

3. *Guest Lecturers.* Most teaching aids, from a simple map to a color motion picture film, allow the instructor to bring the real world into the classroom. On many campuses, the real world includes guest lecturers, ranging from the on-campus specialist to an occasional visting dignitary. With videotape, the appearance of a guest lecturer is not determined by the time of the class meeting. A case in point involves the Physical Diagnosis course in our University's Medical School. This course is the sophomore medical student's first introduction to clinical medicine and is composed of brief introductions to each of the medical specialties. Until videotape, it was impossible to secure the senior professor in each specialty because of scheduling problems. Now, each lecture-demonstration is recorded at a time convenient for the specialist and then played back for the students at class meetings. A new dimension of quality has also been added, since the guest specialist seems to prepare his videotape presentations with considerably more care than he did earlier "live" lectures. Our Zoology Department also experienced the same qualitative advantages from videotape when senior faculty members began recording the basic experiments for the freshman course.

4. *Preservation of Data.* For research purposes, videotape provides the opportunity for an aural-visual record of experiments which can be analyzed

and reviewed at the convenience of the investigator. For example, faculty members from our School of Education recorded student teachers teaching a simple task to a number of preschool children. Researchers will now be able to code the teachers' methods, both verbal and nonverbal, by a careful analysis of the videotapes.

## A FINAL CAUTION

As we have seen, the new small cameras and videotape recorders offer many advantages in the field of Teacher Education. Although such equipment has been in use only a short time, enough experience has been gained to make a few generalizations regarding the appropriate equipment. In our opinion, two basic premises should be used in selecting equipment: its reliability under intensive use and its compatibility with other equipment in the institution. These two premises have led us to the conclusion that there is a definite minimum cost for this equipment. Further, we have reason to believe that when institutions have invested below this minimum, the performance of the equipment has led many of them to reject videotape as a useful instructional aid rather than to place the blame where it belongs—on substandard hardware. Our experience indicates that, as a rule of thumb, the minimum investment for a one-camera-one-recorder package should be $2,000. Also, for a long range reliability and compatibility, we feel that the helical-scan, one-inch videotape systems are indicated.

The use of any electronic aid is severely limited without reliable equipment. Television equipment manufacturers are in a highly competitive market and their salesmen make many promises of performance. We would advise anyone anticipating the use of videotape in instruction to seek objective advice before equipment purchase.

Finally, remember that in this field, as in many others, there are no bargains; there is almost 1:1 relationship between price and quality.

# OBSERVATION TELEVISION AT HUNTER COLLEGE

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and

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The Education Department at Hunter College began to experiment with live closed-circuit and recorded television in 1959. Initial efforts were devoted to three federally-subsidized projects on recording and evaluating the progress of student teachers, on comparing direct observation with live closed-circuit and recorded observation, and on training counselors in empathy. Since September, 1964, the Hunter College Observation Television Center (OTV) has focused on building a library of kinescopes of various instructional situations to supplement the direct observation which has long been part of a number of our course offerings. The overriding principle has been to record on-going, unrehearsed, instructional situations. A variety of problems were encountered. Their dimensions and solutions follow.

## I. *In the Studio*

A. *Seating*—In order to accommodate pupils from kindergarten through college level and to solve an acute storage problem, we experimented with various kinds of tables and chairs. Our present stock consists of the following

—12 tables, 24x53 inches, adjustable in height from 20" to 30" in 1" adjustments, and folding to a thickness of 2 inches;
—4 tables, 18x60 inches, 29 inches high, and folding to a thickness of 2½ inches;
—2 tables, 48x36 inches, 30 inches high, and folding to a thickness of 2½ inches;
—2 nonfolding trapezoid tables, 29 inches high, which are used to create a hexagon;
—36 folding metal chairs, 17 inches high;
—36 folding metal chairs, 15 inches high; and
—15 nonfolding conference chairs.

B. *Camera Wall Mounts*—In order to provide for flexibility in camera placement, the technical staff designed, constructed, and installed eight aluminum wall-brackets, five of which allow for three different heights, one for a fixed "long-shot" position, and two for overhead camera placement. Most of these can be modified with various kinds of extenders to permit special kinds of camera placement.

C. *Room Treatment*—The Studio, a converted classroom, has wall-to-wall carpeting, acoustically-treated ceiling and walls, drapes, chalkboards on one long and one short wall (to permit the use of both axes of a rectangular room), and two large window air-conditioners (which are turned off only during actual recording sessions).

D. *Cameras*—The system includes seven cameras (4 MTI vidicons, 2 Norelco plumbicons, and 1 Fairchild vidicon) only five of which are actually used in the Studio to record a classroom lesson. Of these, four are mounted on remotely-controlled pan-tilt units, and one on a wall mount or tripod (to provide a "cover shot" of the entire room). The four cameras also have remotely controlled 10-to-1 Zoomar zoom lenses. The "cover shot" camera will soon have the same remotely-controlled pan-tilt-zoom features to increase flexibility.

E. *Microphones*—There are five audio lines in the Studio. Three Sennheiser and one Telefunken microphones can be suspended from the ceiling in a great many different positions at varying heights. The fifth line will soon be used for a wireless microphone now on order. This will be worn by the teacher, so that even low-level conversations with individual students anywhere in the room will be heard.

F. *Lighting*—All lighting is from overhead fluorescent fixtures, whose ballasts are mounted in the hall outside the room to eliminate their constant hum. The fixtures provide a flat illumination of 150 foot-candles.

II. *In the Control Room*

(The Control Room is a windowless, large, former walk-in closet, across the hall from the Studio. The one exhaust fan is inadequate in warm weather. The room's location makes an airconditioner impossible, there being no place to vent the warm air. This is an unsolved problem at this juncture.)

A. *Audio*—The technical staff recently designed and constructed a new audio console with automatic level control over a greater range than presently available in commercially produced equipment. During recording sessions, an audio engineer monitors the original sound from the Studio, feeds sounds into the Control Room for the crew and controls the sound fed to the videotape recorder in the Recording Room. This is a highly sensitive operation since there is no way of anticipating whom the teacher will call on to speak, and how long and loud he will do so. The audio engineer is provided with a monitor carrying the "cover shot" plus a seating chart of the particular group in the Studio. Despite these precautions, sound is still the greatest problem we face. Even with only the four overhead microphones, the teacher can be heard from any part of the room except when she talks privately to an individual student. But we do have difficulty picking up the voices of younger pupils. We plan to experiment with ghost curtains at light-fixture level to eliminate standing waves in the Studio and with some kind of foam rubber table covers to counteract the bouncing of sound from their hard surfaces.

B. *Video*—Since the major aim of the OTV Center is to produce recordings of actual, unrehearsed, on-going instructional situations and to minimize all interference with teachers and pupils, our cameras are remotely operated from two control panels designed and constructed by the technical staff. Each unit, operated by one cameraman, has controls for infinite speed adjustments on pan, tilt and zoom. One unit accommodates two cameras, the other handles three. Video quality is controlled by a video engineer, whose equipment consists of

—the CCU's for each camera
—a waveform monitor and its associated video monitor.

C. *Special Facilities*

1. Titling Board—This is a horizontal board, also designed and constructed by the technical staff, electrically operated, which can be moved forward and backward at a variety of speeds. A vidicon camera and quartz crystal lamp are mounted overhead. We make titles on a Varityper Headliner and mount them in a specially constructed slotted board which rests on the titling board during recording sessions. Other visuals are also set down on the board for inclusion in recordings.

2. Controls for the Director—The director controls each program from a Dynair Switcher, with preview and line switching buses, and lap-dissolve capabilities. A special-effects generator permits

the use of vertical, horizontal, and rectangular inset split images, plus keying and matting. These are used in the recording of individual pupils as they are subjected to tests of intelligence and achievement, to supplement the live demonstrations normally conducted by the Education Clinic. The Control Room also houses complete patching facilities to increase flexibility in the placement of cameras.

### III. *In the Recording Room*

(Our earliest operations involved direct recording onto kinescope film via a GPL kinescope recorder. The installation of an RCA quadruplex videotape recorder made it possible to preview recordings prior to transfer to film. This in turn led to a more sophisticated use of the facilities, including the editing of recorded programs. Since we do not have tape-editing facilities, editing is done during transfer from tape to kinescope film or after a work print has been struck from the original negative. To avoid the costs and delays occasioned by outside processing, we purchased additional equipment.)

A. *Videotape Recorders*—The RCA VTR-1B makes it possible to review programs before deciding whether they are worthy of retention in part or in whole. Though still absolutely wedded to the concept of recording unrehearsed instructional situations, our faculty has found that edited versions of such material are frequently more effective than unedited versions, especially where a given process or instructional interaction is repeated a number of times. Therefore, tape playbacks are scheduled after each recording session both to show teachers and faculty what has been recorded and to permit evaluation by director and crew on the effectiveness of their performance. We also have a Norelco VTR 3400, which has been used as a "mirror" by the Music and Speech Departments for conducting and debating classes respectively. We hope to interest college faculty in using the Norelco and one or two cameras to record their own teaching performances for personal and private evaluation.

B. *Kinescope Recorder*—The film magazines on this recorder originally had a maximum load of 30 minutes of film. Since our RCA VTR can run at 7½ i.p.s. for two hours without reloading, and since we do not artificially limit lessons to any given length, we found that film was being wasted in the transfer process. We therefore obtained and installed one-hour feed and take-up magazines. These save us both film and personnel time. We have also modified the recorder by installing a Palmer camera to eliminate shutter-bar problems.

C. *Processing*—We now process our own film with a Viscomat processor, which can handle direct positives, negatives, and prints. We also have a printer, which may be a weak link in the chain, due to as yet unsolved focusing problems. (It should be noted here that we use film as a medium of distribution because we have but one quadruplex recorder for record and playback. Even if playback time were more available than it is, we could distribute programs only at a relatively few rooms. Since heavy use is made of our programs at both of our campuses and during day, evening, and summer sessions, we use film. In addition, our films are listed and described in a catalogue circulated to other institutions, a number of whom rent our films for use in their programs.)

D. *Editing*—This is done with a Miniola film editor, which permits matching raw negatives to edited work prints, or double system (sound and picture) editing.

## IV. *Concluding Statement*

As the material above indicates, we have had to modify equipment and operations to meet new demands on the system. Most fortunately, the junior author of this article is a graduate engineer with remarkable talents and energy (in the well-founded opinion of the senior author!). Too many school installations rely on what salesmen recommend, which often leads to sales but does not always result in facilities tailored to the unique needs of the schools.

Despite the technical leadership available to us, we still face the problem of employing and retaining additional technical personnel because our salaries do not compete with industry, especially in New York City. We have not solved the problem of getting higher salaries for our staff.

The problem of audio, as stated earlier, is still with us. Since we refuse to contaminate the instructional situations by the presence of technical personnel, we cannot monitor sound directly in the Studio. We seek solutions that are within the bounds of the basic concept of the OTV system.

Finally, as with all "hardware" on the market, the "software" lags in development. Since the recording of instructional situations must be controlled directly (or through a technical director) by professional educators, we need to develop a new specialization. Either personnel from the communications field must learn to record what educators want to have, or educators must learn to use the medium to record what they want. Or both. Recorded material has a tremendous contribution to make to instructional programs, but educators and communications personnel must learn to work together to produce the "software" which will vindicate the faith many of us have in the potentials of the medium.

## USE OF VIDEOTAPED MATERIALS AS A SUBSTITUTE FOR CLASSROOM AND CHILD GROUP OBSERVATIONS

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Renewed emphasis is currently being placed on laboratory experience as the heart and substance of teacher education programs. Perhaps second only to the student teaching experience itself, observation-participation activities are being given a major share of attention. Many preparing institutions are confronted with a dilemma, however. In the face of an ever-increasing demand for high quality student teaching stations, the number of model teachers available for observation and limited participation experiences is concurrently diminishing.

A possible solution to the problem lies in the application of the new media in teacher education programs. In particular, the videotape recorder has opened whole new vistas in this regard. The videotaped observation has some inherent advantages over traditional direct observation in the classroom, chief among which is the fact that the recorded episode can be viewed, stopped, repeated, discussed, continued, and studied in great detail. With direct observation, the event passes and probably nobody remembers exactly what she witnessed in any great detail. In fact, perhaps no two people would see exactly the same thing. The videotaped observation, on the other hand, permits the instructor to preview the presentation, call attention in advance to specific or characteristic teaching techniques or methods, and replay all or parts of the tape to reinforce specific points.

In addition to the factors mentioned above, direct observation in the classroom has always been encumbered with certain limitations which interfere with realization of maximum benefit from the experience on the part of the prospective teacher. To begin with, there is the problem of space. Traditional classrooms were not designed to accommodate large numbers of visitors or observers, so observation experiences have accordingly been restricted to small groups. It has, therefore, been impossible in most situations for all students in a given professional education course to view the same thing going on at the same time and afterward to participate in a rather detailed analysis of the event.

Observers usually have been quite restricted in their free movement about the class lest this interfere with and distract both students and teacher from the primary purpose of the educative process. Even when special observation areas have been provided and one-way glass installed to minimize this problem, the limited view of what is actually going on is accentuated.

Other significant problems commonly encountered in arranging direct observations in classrooms involve such things as travel to the location where the observation has been scheduled, changes in plans or class schedules, and insuring that the particular activity has optimum value as an observational experience.

With the videotape recorder, on the other hand, equipment can be set up and a sequence taped at the convenience of the subjects involved—teachers, pupils, teacher-education specialists. Once recorded, the experience is almost completely at the disposal of the college instructor as to the manner in which it may be used. He may schedule at his convenience and in accordance with his overall teaching plan—correlating recorded episodes with selected aspects of teaching which may be under consideration. He can select, edit, or combine sequences to suit his purpose, and, as mentioned before, the episode may be viewed repeatedly, whole or in part, to reinforce certain key concepts.

It is not intended that we view the videotape recorder as a panacea which will provide the answers to all the perplexing questions in the area of laboratory experience. There have been, and continue to be, certain limitations to its use. Cost, a significant factor in the past, is becoming less of an obstacle as equipment becomes less complex and consequently less expensive. Adequate equipment is now within range of most teacher education institutions.

In addition, it should be pointed out that videotaped observations are "vicarious, two-dimensional, subject to all the limitations of the television camera lens (and the operator who guides it), as well as inadequacies of microphones . . ., the transmission system, and monitors.[1]"

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[1] Herbert Schueler, Gerald S. Lesser, and Allen L. Dobbius, *Teacher Education and the New Media.* (Washington, D. C.: AACTE, National Education Association, 1967), p. 29.

A question has also been raised as to the degree of artificiality that is induced by the electronic "gear" used in the classroom to make the initial recording. Experience has demonstrated that both students and teachers usually adjust rather quickly and tend to become so involved in what is going on by way of instructional presentation that they become somewhat unaware of the videotaping equipment. This adjustment is particularly true with younger pupils in the elementary grades. Junior high and senior high school students seem to be more concerned with their "image" on videotape and tend to "warm up" more slowly to active participation in the recorded classroom activity. Television cameras operated by remote control have been used successfully in this regard, but the pressure on the teacher resulting from his awareness that his performance is being recorded continues to be a limiting factor in this kind of structuring.

The 16 mm sound film camera has been used in place of the television camera with the inherent advantage of improved pictorial quality. Limited magazine capacity, however, coupled with the fact that television cameras can be operated from a distance, need less special lighting, and have uninterrupted recording capacity of up to one hour or more, tends to tip the scale in favor of the latter method of operation. Near instantaneous replay is a very important advantage which should not be overlooked.

In an effort to determine the extent to which videotaped classroom episodes could supplement, extend, and reinforce other laboratory experiences in teacher education, the state of Utah, as a part of an effort coordinated through the Multi-State Teacher Education Project, undertook the production of a series of unstructured observations in various kinds of classroom situations throughout the state. Included were sequences (1) at elementary and high school levels on the opening day of school, (2) in a fifth-grade classroom of an integrated school (Indian and white children) in isolated southeastern Utah, (3) in an economically deprived area—prekindergarten education in an Ogden City elementary school, (4) in a rural, two-room school in western Tooele County near the Nevada border, (5) in a continuous-progress laboratory school at Brigham Young University, (6) in a nongraded rural high school, (7) and (8) in a typical urban and a typical rural elementary school, and (9) on team teaching at first grade and at junior high school levels—coordinated with the Weber County Exemplary Team Teaching Center. At the present time these episodes are being used and evaluated by teacher education institutions in Utah and several other states.

While it may be too early to form valid conclusions with regard to the use of such videotaped observations, the following are a few of the impressions that have been conveyed by those who have had occasion to view and use some of the episodes:

1. Videotaped classroom episodes have distinct advantages over direct

observation but also have some limitations. They constitute a valuable supplement to other kinds of laboratory experience.

2. Observations recorded on 16 mm sound film may have some advantages over videotaped episodes, particularly when immediate replay is not a valid requirement.

3. Short, single-concept episodes may prove to be more valuable than prolonged videotaped observations. The ultimate medium may be the 8 mm sound film loop made from videotape or 16 mm sound film.

No less an authority than L. O. Andrews has declared that "... there are certain kinds of observations that I would not like to substitute media for. There's the whole matter of reality. You need to expose young people to the reality of the kind of classroom they expect to teach in. They need to see it, they need to feel it, they need to smell it, they need to be a part of it, and this doesn't take very long; but unless this is done, many of the random observations that young people do in education, of course, simply have very little value... .the recorded classroom episode (is) a means of making observation more functional in education courses.[2]"

## USING VIDEOTAPE ACTIVITIES IN TEACHER EDUCATION

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Within the School of Education at Syracuse University, the use of videotape was originally developed in a special program of teacher preparation for secondary school teachers. Under a grant from the Ford Foundation, the Inter-University Program in Teacher Education (Project I) was enabled to purchase the then expensive equipment and get a relatively early start in exploring the uses of videotape as a tool for studying teaching.

### THE MAJOR USE

Initially, and still primarily, the major effort was to tape teaching interns in their own classrooms in regular teaching activities to enable them to see and react to their own instructional behavior. The first tapes were made in the fall semester of 1963. Since that time each intern in the special program has been taped in his classroom twice during the internship experience and has had an opportunity to view himself in action.

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[2] *Proceedings,* Multi-State Teacher Education Project, Planning Conference. Treasure Mountain Inn, Park City, Utah: July 1966, p. 24.

Typically, the recording has been a 30-minute segment of continuous classroom activity, sometimes with special planning, at other times with quite routine regular activites. In some semesters, when schedules permitted, much more than the half-hour was recorded, and the intern had an immediate opportunity (in a free period or immediately after school) to view an extended episode. In these cases a half-hour segment was selected and retained as a "record-tape."

The direct use of tapes has been accomplished in a variety of ways. In some cases the intern has arranged a private viewing with no one present except the technician. In other cases, he has viewed with a fellow intern or interns. Sometimes a supervisor or several staff members participated in a viewing and critique, and sometimes a tape was first viewed in a full seminar setting. Each approach has had its advantages and disadvantages. Our main concern has been that the tape be used for objective feedback and analysis of instructional behavior, and that a judgmental set be avoided as much as possible.

### *Student Reaction*

By and large, interns have appreciated the opportunity to see themselves in action. Their reactions have ranged all the way from self-condemnation through quite objective analysis to defensiveness and self-justification. Some have tended to focus on the pupils and their behavior and to see things happening in the classroom that they had not been aware of while teaching.

It is possible that reactions to the experience would differ with students who have been prepared in different ways. The students in the special program had been prepared in a long-term context of studying teaching and of becoming alert to instructional behavior.

### *Preparing for the Experience*

The interns who went through the experience described were in their second or third year of professional training (senior year or graduate year). They had been exposed to early teaching-participation experience, had gone through rather intensive analyses of the teaching-learning process, and had been trained in the Flanders system of interaction analysis. They had gone through an exercise of preparing and taping a short television production for familiarization purposes and had been required to capture some of their teaching on audiotapes and listen to them prior to the videotaping. This context and series of experiences probably produced a different dynamic for viewing than would another series.

### *Technical Procedures*

The technical details of the videotaping activity are not of major concern in this paper. However, some readers may be interested in avoiding our mistakes and guarding against some operational problems.

In contrast to some classroom recording operations which use remote controls, we have operated with one camera and a cameraman in the classroom. The recorder has typically been in an adjoining room or hall. The cameraman has used his own judgment in focussing on the teacher, the students, and other aspects of the classroom.

Although our intention has been to capture spontaneous behavior in regular classroom settings, it has been expedient to select one classroom in a school for video operations rather than move from classroom to classroom. On videotaping days, classes to be taped are scheduled into that room. With current improvements in simplicity and portability of equipment, movement from room to room may be desirable.

Getting consistently good audio-recordings remains the major problem. Our best results have been obtained with a wireless lavaliere microphone on the teacher and two standing microphones in the room. Judgments must constantly be made between simplicity of set up and quality of recording. As changed equipment has come on the market there has been a proliferation of videorecorders, and no standardization has occurred as yet. First recordings were done on a one-inch Precision Instrument recorder. Later recordings were done on a two-inch Ampex 660B recorder, and some current recording is being done with ½ inch General Electric Recorders. Other units in the School of Education are using Panasonic equipment. Eventually some standardization should occur, especially to provide for interchange of tapes.

## ADDITIONAL USES OF INTERN TAPES

The library of examples of teaching contained in the intern tapes has made possible a number of additional instructional uses.

### *Training in Interaction Analysis*

Selected tapes are used to provide repeatable observation experiences for analyzing instructional behavior. Teacher preparation students are trained to observe and record verbal interaction in the classroom in the system developed by Flanders. The tapes provide a wealth of classroom data for such training.

### *Illustrations of Teaching*

Time has not yet been available to catalogue the tapes in order to isolate specific illustrations of teaching. However, certain portions of tapes that we are familiar with are regularly used in classes and seminars as illustrations of particular approaches to teaching and as examples of certain kinds of teaching and classroom activity. As our program has moved toward a focus on studying instructional behavior, existing tapes are increasingly used as raw observation data. They have proved especially useful in the graduate programs for doctoral students with a major emphasis in Teacher Education as they move into various analyses of the teaching-learning process.

### *Role Playing Supervisory Conference*

A beginning has been made in training supervisors and studying supervision by using the existing videotapes as stimulus situations for role playing post-observation conferences. A rotating, triadic role relationship of teacher, supervisor, and observer is set up with the tape as the instructional observation to deal with.

### *Demonstrations*

Beyond the direct instructional use of the tapes, they have proved valuable as demonstrations of teaching activities and as bases for discussion of training activities at conferences on student teaching and similar professional activities.

## OTHER CURRENT USES OF VIDEOTAPING

In addition to the major use and the activities it has generated, a number of other utilizations of videotaping are continuing.

### *Initial Teaching and Micro-teaching*

In conjunction with a special program to train teachers for urban schools, beginning interns have initial teaching experience in a summer session. A short segment of their initial teaching is videotaped and is followed up by planned micro-teaching activities. Both the initial teaching and micro-teaching sessions are videotaped for analysis.

### *Planning for Science Instruction*

Special methods classes in science teaching have used a combination of role-playing and micro-teaching with videotape feedback for presenting and demonstrating science instruction.

### *Samples of Special Classes*

One project just completed is the taping of spontaneous student and teacher behavior in classes for the mentally retarded and for the emotionally disturbed. In addition to the tapes, edited portions have been kinescoped and are being used both in a research project in special education and as observation data in special education classes.

## PLANS FOR CONTINUED USE

As the special training program in which the videotaping was developed is brought to a close, we plan to extend the videotaping to segments of the regular program. The first such program is a combined training-research project with elementary student teachers.

### *Supervision of Elementary Student Teachers*

In the 1967 Summer Session, thirty-five elementary teachers will be trained in a Workshop in the Supervision of Elementary Student Teachers. Each of these teachers has been videotaped in his own classroom for a portion of a regular teaching day. The workshop activities will include analyzing their own tapes and using them for supervisory training. The teachers will be trained in the operation of cameras and videorecorders and in ways to provide feedback to student teachers.

In the fall, these cooperating teachers will work with student teachers, having cameras and recorders available so that they may help to provide feedback to student teachers.

The accompanying research project will follow these student teachers and another group working with untrained teachers to assess any differences in instructional behavior between the two.

### *Taping Segments of Instruction for Multiple Sections*

Quite a different use of recording equipment is planned for the school year 1967-68. In selected courses with multiple sections, two different approaches are to be used. In one approach, appropriate segments of instruction will be videotaped in the first section presentation and used in later sections. In the other approach a pre-planned studio presentation will be taped and presented in multiple sections. In both cases this will have the effect of freeing the instructor for activities other than repetitious presentations. How large a portion of the courses will be handled in this way is not yet known.

### *Studying Teaching*

It is hoped that the library of taped classroom episodes being assembled can be used increasingly for study projects in teaching behavior and for repeatable observation in teacher preparation. The resource is here. Time and energy are the variables in short supply.

## OPPORTUNITIES AND DIFFICULTIES

Much of the literature and discussion on the use of television and videotape in education emphasizes its *mass media* quality. With few exceptions, the uses described here move in quite a different direction. They emphasize the very *personal* and *individualized* use of the medium.

To capture spontaneous behavior and to see myself (in classroom recording); to perform, observe myself, try again (in micro-teaching); to react to another on a one-to-one basis (in supervisory role-playing); to analyze interaction among students and teacher in a particular situation—these all have peculiarly personal impacts. No other medium has quite the intimacy for self-analysis that videotape, used in particular ways, can have.

It seems to us that, for teacher education, these more personal and immediate meanings provide greater opportunities than the more conventional mass media concepts.

We have been most fortunate in being able to acquire equipment at the critical times in the development of videotape activities. We have also been most fortunate in acquiring graduate assistants with the combined interest and training in teacher education, media utilization, and television.

As equipment proliferates, the need for maintenance and technical help starts to become crucial. Expansion of interest in videotaping is beginning to present logistical problems that we are not yet staffed to organize and handle.

Finally, the existence of voluminous data on videotape becomes an embarrassment of riches. One is frustrated by the knowledge that there is so much more that one could and should be doing with this tool and resource for teacher education.

# THE USE OF VIDEOTAPES IN THE PREPARATION OF ELEMENTARY SCHOOL TEACHERS OF ARITHMETIC

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In September of 1963, the College of Education at the University of Delaware installed closed-circuit television equipment between the College of Education building and an elementary school classroom in the Newark Special School District. Two television cameras were installed in the elementary school classroom, one directed on the blackboard in the front of the room and one directed on the children's desks. A classroom in the Education Building was equipped with two television monitors and a control panel placed in the rear of the room. From this control panel in the University classroom, it is possible for the operator to turn, zoom in or out, and focus the cameras in the elementary classroom.

This closed-circuit television system was initiated to be used in developing an arithmetic methods and curriculum course to be offered by the College for elementary education majors. The college students have the opportunity to observe elementary school classes in arithmetic in their own campus classroom with the college professor. This is a vast improvement over the usual procedure of traveling to schools in the neighborhood where college students might file into a strange classroom, distract the pupils and teacher, and often observe some unrelated lessons. While this equipment offers many worthwhile improvements to the elementary program, it was not until the addition of a videotape unit that the real advantages of the closed-circuit television system were realized.

In the spring of 1965 a videotape recorder was obtained, and since that time two additional recorders have been purchased. These recorders make it possible to record on tape the activities in the elementary classroom; then the tapes are available to be played back when desired.

Arithmetic lessons are taught by an experienced elementary school teacher or a member of the University staff, recorded on tape, and later viewed by the University students at various times throughout the semester when they are appropriate. Since the University professor has an opportunity to review and plan the type of lesson to show his class on tape in advance, this makes it possible to discuss with his students before it is viewed the preplanning that went into the lesson and the particular aspects of the lesson to look for. Also, the tape may be stopped or played back during the observation so that an incident may be analyzed at the precise moment it occurs without losing the remaining portion of the lesson.

Between observing the lesson at a time when it is pertinent to the course content, discussing its planning and execution with the teacher, and critically analyzing its effect on the students during and after it is observed, the students become completely involved in the program.

Perhaps one of the most worthwhile experiences made possible by this equipment is the opportunity for the prospective teacher to plan and teach an arithmetic lesson and then observe herself by means of videotape. Three or four students are assigned a particular lesson to be taught to an elementary school class. These students plan and prepare the material for the lesson with the assistance of the University professor, and one of them takes the responsibility of teaching the class. Their lessons are recorded on videotape, and a viewing session with the University professor is held to analyze the presentation. The benefits of this conference while watching the lesson on tape are invaluable and considered a highlight of the experience. There is no more effective means of self-evaluation in a teaching situation than being able to observe oneself on tape, and students who have had this opportunity claim it was one of the most worthwhile experiences in their training.

The use of videotape has made it possible to develop a library of significant lessons and activities to be used with different classes and individuals. Tapes have been made of specific aspects of the elementary arithmetic program. One such tape, used on many occasions, involves the demonstration of prenumber activities with preschool children. A group of preschoolers was individually presented Piagetian number-concept tasks and their performance and reactions were recorded on videotapes. These tapes are used when a class is considering number-readiness concepts with primary school children.

Recently, with addition of portable television cameras, the Mathematics Education staff at the College of Education has been traveling to various high schools in the area to tape lessons taught by student teachers from the University. A panel truck was purchased to transport the equipment to the location, and a graduate assistant has been assigned the responsibility of recording the sessions. This has enabled the secondary majors to have the same opportunity to analyze their teaching as has been described for the elementary majors.

There have been technical and organizational problems connected with the system, but adjustments have been made to overcome many of these. For the first few weeks the elementary school students were extremely conscious of the cameras. The same elementary school classes are used during the entire year, and after a couple of weeks of being televised they become accustomed to the situation. Unlike some of the dramatic demonstrations exhibited by the elementary children, the high school students seem reluctant to participate in class discussion because of the self-consciousness caused by the presence of the cameras.

The key to the success of viewing videotapes is the effective utilization in the presentation. Unless the student is aware of specific goals for viewing the tape and is made to feel a part of the presentation, he or she will rapidly become bored. The writer has found that videotapes have a definite advantage over live telecasts. If one knows in advance the critical aspects of the lesson, then he may prepare the class for the observation and be certain that the class will observe a particular aspect of the presentation.

The staff is presently considering a proposal to design an inservice program for elementary school teachers, centered around the use of videotapes to supplement class instruction. The plan would be to use tapes of actual elementary school class lessons in conjunction with discussion of teaching techniques for various topics in arithmetic. Teachers frequently criticize inservice programs because of their lack of reality when considering the actual classroom situations. Videotapes could be used to demonstrate to the teacher the application of ideas presented in class. Videotapes have already been used in this manner with University summer school classes for teachers. Tapes of elementary school classes, recorded during the school year, have been utilized in the development of an arithmetic methods and curriculum program.

The experience of working with videotapes in this program has made it evident that the possibilities offered by the use of this medium to teacher education are unlimited. However, it should be noted that it is imperative that good technical assistance in the operation of the equipment be available to the people using the system. The curriculum developers utilizing the videotape equipment must be free to spend their time implementing this medium in the teacher preparation program without concerning themselves with such problems as quality of the picture or sound, moving of equipment, blown fuses, and various other technical complications. Therefore, it is recommended that before an institution attempts to use this equipment technical assistance should be available.

# MICRO-TEACHING IN THE TRAINING OF TEACHERS: PROGRESS AND PROBLEMS

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The term "micro-teaching" was coined at Stanford University to describe teacher education procedures developed in connection with its Secondary Education Project which was financed by the Ford Foundation.

Micro-teaching as practiced at Brigham Young University consists of the presentation of a four to eight-minute lesson by a trainee to a "class" composed of three to five local elementary or secondary students. This presentation has as its aim the demonstration of a specific behavior. With the student teacher and the volunteer "class" are the other members of the trainee's teacher education class and the course instructor.

As the lesson is presented, it is recorded on videotape. The instructor-evaluator observes the trainee's teaching effort and jots down suggestions for improvement. At the conclusion of the lesson, the "class" members and the college class complete evaluation forms.

The instructor and the trainee discuss, in a general, usually positive, way the performance. The instructor may make suggestions about what to look for during the videotape playback. The trainee, instructor, and college class observe it and comment freely. Occasionally the students in the micro-class are invited to participate in the oral evaluation. Specific suggestions for improvement are sought by the instructor from the micro-class, the trainee himself, and the observing college class members.

Practice at this point varies depending on the needs of the trainee as perceived by the instructor-evaluator. Some trainees benefit more from constructive criticism, others from positive reinforcement.

One of the aims of the evaluation session is to prepare the trainee to reteach his lesson. At the conclusion of the evaluation, the instructor and the trainee decide on one or two areas of major difficulty on which the student will concentrate in his next presentation.

Some examples of specific behaviors sought at Brigham Young University are

1. Teaching a concept

2. Reinforcing student behavior

3. Asking appropriate questions

4. Interesting and involving students

5. Giving assignments

6. Using inquiry training

7. Teaching a concept non-orally

Those who work with micro-teaching encounter a number of problems with the procedure. Many institutions will encounter a problem not experienced at Stanford University because of the number of students enrolled in a teacher training program. The ratio of one student and one supervisor which Stanford has found so successful requires more time than is available. The university, for instance, which trains and certifies a thousand teachers a year, as does Brigham Young University, could not possibly give these teachers experiences in one-to-one ratio. One solution which has been tried and is briefly described earlier in this paper allows the micro-teaching to take place with a class of trainees observing and evaluating the teaching performance of one of their peers.

Evaluation forms which help trainees look at and judge a specific behavior are used by all persons observing the performance of a micro-teacher. Often these trainees participate in the oral critique of the micro-teacher following the presentation of the lesson. Experience indicates that this procedure tends to sensitize the trainees, thus requiring fewer micro-teaching experiences to accomplish the same degree of proficiency.

Another problem which will exist at many universities, and does at Brigham University, is the problem of obtaining students for the micro-class. Ideally these students should be either secondary or elementary students of an age appropriate to the trainee's future teaching assignment. To do micro-teaching during the day is quite impossible because students of these ages are not available. Another part of the problem is encountered when students have to be transported to and from their homes or to and from their school after school hours. Quite often the most desirable high school students have employment or other activities which add to the difficulty of obtaining them. Stanford has solved one of these problems by hiring appropriate high school students. At most institutions, this will not be possible without research and development funds. At Brigham Young University students are recruited with the aid of principals of local adjacent secondary and elementary schools. These students must usually be used after school hours or in the evening. Parents are usually happy to permit this kind of activity, but transportation is often still a problem. Some universities have chosen to do peer teaching instead of using public school students. Peer teaching is a situation in which the trainee teaches a concept or a skill to three or five of his peers, other college students, who then subsequently help in judging his performance. With peer teaching there is always a ready-made micro-class available. This creates a disadvantage, of course, in that the micro-teacher does not know whether his objective is appropriate for a specific age group and usually the peer class already knows what the micro-teacher is attempting to present, so that the experience is not so realistic as it should be. As the Brigham Young University Laboratory school moves into flexible scheduling on a daily basis, students may be available at all hours of the day for micro-teaching classes.

Some of the problems related to micro-teaching have to do with the physical facilities necessary. Sound, for instance the ability to capture the responses of micro-students and also the voice of the teacher, has created problems for most persons who have used this medium. The use of the small class, four or five students, helps alleviate this problem. By using an audio mixer, which allows a lavaliere for the teacher and also one or more microphones aimed at the micro-class, many of the problems of sound have been reduced. When micro-teaching is conducted in a typical classroom, acoustics is always a problem, and nothing short of moving into a micro-teaching studio will solve this problem. Studios of course are not available on most university campuses, and micro-teaching usually occurs either in a regular university classroom or in a renovated facility. Under these conditions, equipment has to be moved in and out with all of the attendant problems of moving video-recording equipment.

Beginning with the fall semester 1967, Brigham Young University will do the majority of its micro-teaching in a studio. Lighting, of course, will be much more consistent and appropriate; sound problems will be reduced; and the difficulties of moving and storing equipment will have been overcome.

Micro-teaching involves a great expenditure of faculty time per student trained. Stanford's solution, and one which is probably as promising as any other, is to use graduate assistants to do much of the supervision of the micro-teaching sessions. Trainees themselves play a greater part of this role after having micro-taught three or four times. Model tapes which demonstrate specific behavior for the supervisor may reduce the time involved by professional supervisors.

An innovation is of little worth to the education profession unless it can be used by persons other than the creator. This is one of the difficult drawbacks to the widespread use of micro-teaching. Most public school teachers and supervisors are afraid of the procedure. Most university and college personnel are not acquainted with it. As with any other new procedure, until members of the profession become much more comfortable and knowledgeable about micro-teaching, inertia will prevent its widespread use and acceptance. It is easier for us to do what we know than to take time and expend energy to learn of a new method, regardless of the promise it may hold. Some teachers, possibly more common in universities than in public schools, assume an attitude which often gets in the way of their trying something new; they tend to pre-judge the procedure in terms of their past experieces rather than try it. Time and research will probably reduce this problem. As teachers become more acquainted generally with micro-teaching and with the research regarding its efficacy, they may be more willing to use it in their class. It is quite possible that students who have micro-taught as part of their teacher training will provide a positive picture of the procedure as they move out into the classrooms and universities. As public school teachers are involved in planning inservice training projects, they too will become less afraid and more knowledgeable.

## VIDEOTAPE TECHNIQUES AT STANFORD UNIVERSITY

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The micro-teaching clinic at Stanford University was developed to reduce the complexities and trauma associated with the first teaching experiences of student teachers. Conventionally, a student teacher faced thirty or more students for fifty minutes the first time he taught. In addition, he had to await feedback on his performance until his supervising teacher had a free period that day or possibly even the following day. In either event he would probably need to wait until the following day before he could implement suggested changes.

Micro-teaching provides a teaching encounter which is scaled-down both in time and in the number of students. Typically the teaching episode is five minutes in length and is recorded on videotape for subsequent playback during the critique. Each teaching episode provides a genuine learning situation as the teacher faces a new group of students during the reteach phase.

The micro-teaching clinic is conducted the summer prior to the internship in public schools. The first three weeks of the clinic interns teach five-minute lessons in teach-reteach sequence with an intervening critique and planning session. One intern will teach two sequences each week. Following a one-week recess, groups of eight interns all in a subject-matter area plan a series of 20-minute lessons to be taught during the ensuing three weeks. Each intern teaches two lessons during the three weeks of microclasses.

In addition to the above, interns teach a diagnostic lesson the first day of the clinic. Both lessons are five minutes in length, and the intern teaches a lesson of his choice within his subject matter field.

The videotape recording of the teaching episode is played back during the critique sessions following each teaching experience. Supervisors select one or a maximum of two teaching behaviors for emphasis during the conference. These may be of his own choosing or be pre-determined by the organization of the clinic. The videotape provides the teacher and supervisor with a common frame of reference for their discussion rather than recall alone.

As the tape progresses, the supervisor REINFORCES the teacher for positive instances of the teaching behavior and stops the tape to point out instances where the teacher can increase or implement certain behaviors. Videotape also provides the facility for reversing the tape and viewing certain sections repeatedly, if the situation demands.

This recording also provides a cumulative record of the intern's performance over the course of the summer and throughout the internship.

The micro-teaching format is particularly well suited to research on various procedures for training teachers. Several research projects are conducted each summer and throughout the intership. These consist of interns teaching a sequences of three five-minute lessons with two intervening sessions varying according to the design for the study.

Each of the regular micro-teaching sequences and the experimental sequences just described emphasize a technical skill of teaching.

Technical skills of teaching are defined as specific teaching acts which can be stated in behavioral terms. The technical skill can be evaluated using behavioral ciriteria as opposed to subjective and opinion measures commonly used to evaluate gross teaching ability.

Examples of skills defined are:

Probing: a specific questioning technique (with several subcategories) requiring students to go beyond "first answer" responses.

Reinforcement: the teacher administers verbal and nonverbal rewards for student participation and/or answers.

Silence: the teacher creates a period of silence at various points in a lesson such as after a student response or following a question—a technique to stimulate thought and discussion.

Redundance Skills in Lecturing: using varied repetition (examples, etc.) to emphasize and clarify key words and principles.

Television models have been prepared for each of the technical skills. These model tapes are typically five minutes in length and feature only one skill and its subcategories. They have the advantage of fewer distracting stimuli which permits the teacher to focus on the specific teacher behavior being demonstrated.

Various viewing techniques have been developed. A supervisor may view the model tape with the teacher focusing his attention on the relevant cues and teacher responses. Currently a self-viewing procedure has been developed. Focusing comments which are contingent upon the behavior being modeled are recorded on the parallel sound track of the videotape. A second procedure consists of inserting or superimposing a visual prompt when the behavior occurs.

Portable television recording units are utilized in micro-teaching and classroom recordings. This unit is self-contained with all the components installed in a 20-inch by 30-inch wood and formica cart mounted on casters. The vidicon camera is mounted on a removable board which sits atop the cart. The recorder is mounted in the bottom of the unit and is connected to a patch panel on the top deck. The unit also contains a small 5-inch monitor, a mixer-compressor-amplifier, and a wireless microphone and receiver. The operation of the unit has been simplified to the point that one college undergraduate can roll it into the classroom and prepare it for recording in four minutes. Due to the absence of hanging microphones, multiple cameras, and extra lighting, the recording procedure is relatively unobstructive in the classroom.

# THE USE OF VIDEOTAPE RECORDING IN TEACHER EDUCATION

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The College of Education at Wayne State University has been engaged in the use of videotape as a tool in teacher education for a number of years. Early work under a Ford Foundation Grant known as the Teacher Education Experimental Project developed the technique of remote recording and feedback of performance as well as interaction analysis for student teachers in a special training program at the Master of Arts in Teaching level.

More recently, we have engaged in extended use of portable videotape equipment for self-appraisal of student teachers, for supervising teacher appraisal of student teachers, and for appraisal of student teacher performance in the classroom by other groups. In the last eleven months, we have developed a number of formal micro-teaching activities in areas such as Business and Distributive Education, Industrial Education, Secondary Science Education, and in our basic introductory course in the College of Education for prospective teachers. Beginning with the Summer Session, 1967, extensive micro-teaching activities will be conducted for all students in Master of Arts in Teaching Programs. The National Teacher Corps Project here at Wayne State University is also making extensive use of portable videotape equipment for both micro-teaching type activities and self-appraisal. Connected with the self-appraisal process is extended use of such techniques for recording and evaluating progress of student teachers, recording pupil reactions to teacher behavior for further analysis and study, and for purposes of preserving original data for later analysis and research. An improvement in the overall calibre of the various teacher preparation programs utilizing micro-teaching has been the required identification and definition of teaching skills. Evaluation instruments have been refined to reflect those skills of teaching which have been the focus of concentrated training rather than vague generalities concerning indefinable teacher qualities.

The most significant aspect of our efforts in these areas has been the increasing involvement and interest of student teachers, supervising teachers, and University faculty members in the critical analysis of teaching learning behavior. After a short exposure to the self-appraisal process, student teachers become enthusiastic supporters of this technique. They see it as a method for developing their confidence in themselves as teachers before entering the classroom. Student teachers and supervisors both report that they have a common perceptual base on which to discuss the student's teaching activity. The re-teach aspect of the micro-teaching sequences is particularly appreciated by the student and is judged by him to be highly significant in changing his basic approach to teaching. College faculty members are enthusiastic about the long-range research and progress measurement that will be made possible through selected clips in an information storage bank. It also appears to be feasible to build an extensive library of teaching examples, which, in the near future, can be stored in our random access facilities for direct instructional purposes.

The only significant problems that have cropped up have been of an administrative nature and have been solved largely by allocating technical support to the on-going activities of recording classroom episodes, supplying a facility for self-appraisal, and providing regular scheduling activities through clerical and secretarial help. As these have become increasingly efficient, most of the slippage in performance of equipment and delivery of program at the correct times has been eliminated. One of the most desirable off-shoots of the self-appraisal and micro-teaching activities has been the encouragement given the student teacher in the use of many other types of new media in his actual on-going teaching. The micro-teaching self-appraisal process seems to have eliminated some of the fear students may have of operating technical equipment. They see their supervising teachers and college faculty members using this equipment, which has had up to this time somewhat of a mystique surrounding it, and they discover that they, too, can make appropriate use of new media materials and devices.

Long-range planning is now in process to provide every student who enters teaching program experiences in both micro-teaching and self-appraisal before he enters the classroom as a student teacher, during his student teaching experience, and following his student teaching experience. Hopefully, each student will be able, before he accepts his first contract, to review his entire performance in the teaching field during his two years of training in the College of Education. In the future, it may be possible to provide interviewing officers with samples of a candidate's teaching behavior as a part of that person's credentials in a job application situation.

We have received many requests from inservice teachers for an opportunity to engage in the same kinds of processes that student teachers are now engaging in. It appears that the micro-teaching self-appraisal technique has great application for inservice training.

# SELECTED RESEARCH ON MICRO-TEACHING

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Micro-teaching is a recent development in teacher education in which a miniature teaching situation is created under controlled conditions. All of the elements of the teaching act are present. The uniqueness of micro-teaching consists of two elements: (1) the ease with which the teaching situation can be controlled and manipulated and (2) the availability of immediate feedback for the student teacher.

This paper will summarize briefly selected research at three institutions related to micro-teaching. No attempt is made to provide either an exhaustive digest of research or a comprehensive bibliography. The reader is assumed to have some familiarity with the technique of micro-teaching.

## *I. Stanford University*

A. Preservice. The findings proceed from four micro-teaching clinics conducted from 1963 to 1966 during the summers. To date 459 students have participated in these clinics.

1963—Experimental and control groups were formed, and controls were given field observation experience and also acted as teacher-aides. The experimental group had three micro-teaching sessions per week for eight weeks. Teaching performance of members of both groups was evaluated by the high school students who acted as the micro-class and by the Stanford supervisors. The instrument used rated performance on eight items along a five-point scale. Both the micro-students and the supervisors received training in the use of this instrument. The findings are reported as follows:

1. Candidates trained through micro-teaching techniques over an eight-week period and spending less than ten hours a week in training, performed at a higher level of teaching competence than a similar group of candidates receiving separate instruction and theory with an associated teacher aide experience—involving a time requirement of 20 and 25 hours per week.
2. Performance in the micro-teaching situation predicted subsequent classroom performance.
3. Over an eight-week period, there is a significant increase in the accuracy of the candidate's self-perception of his teaching performance through identification of weaknesses as well as strengths.

4. Candidates who received student appraisal of their effectiveness improved significantly more in their teaching performance than candidates who did not have access to such feedback.

5. Ratings of video transcriptions of teaching encounters correlate positively with live rating of the same encounters.

6. Trainees' acceptance of the value of micro-teaching is high.

7. Micro-students' ratings of teaching performance are more stable than any other–including those of supervisors.

8. Three skills subjected to experimental treatment in micro-teaching produced significant changes in the performance of intern teachers. (Bush and Allen, 1964)

1964–substantiated findings of 1963.

1965–substantiated earlier findings. A new criterion instrument was adopted, the Stanford Teaching Competence Appraisal Guide. When comparing the first and last lessons which were micro-taught, significant change was found in twelve observation categories at a probability level less than .01.

1. Clarity of aims.
2. Appropriateness of aims.
3. Organization of the lesson.
4. Selection of content.
5. Selection of materials.
6. Beginning the lesson.
7. Clarity of presentation.
8. Pacing of the lesson.
9. Pupil participation and attention.
10. Ending the lesson.
11. Teacher-pupil rapport.
12. Variety of evaluative procedures.

1. Micro-teaching provides realistic approximations to classroom teaching conditions allowing predictions of subsequent classroom teaching performances to be made with a high degree of accuracy.

2. Candidates receiving student feedback (in addition to the video playback) improved significantly more in their teaching performance than candidates not having access to such feedback.[1]

1966—Definite discrepancy between student ratings and supervisor ratings appeared. Student ratings are now considered more reliable. The effectiveness of micro-teaching again was substantiated. The gain in rating from the initial diagnostic session to the final diagnostic session (six weeks later) was significant beyond the .00001 level—as rated by both students and supervisors on the Appraisal Guide.

Stanford personnel note that the videotape recorder is a valuable adjunct to the micro-teaching process because of the immediate feedback available to the student teacher. It was further concluded that it is of little help merely to sit and view the videotape in a global fashion; specific things (one or two) to look for need to be pointed out to the student teacher.

B. Inservice. Although *there have been no empirical data published,* Stanford has done inservice training with school districts in northern California and is beginning to research the following areas:

1. Micro-teaching as a means of determining appropriate level of instructional materials.

2. Micro-teaching for preemployment prediction. Stanford has found that prediction of employment of teachers by a school district can be accomplished by utilizing micro-teaching ratings.

3. Micro-teaching to train supervisors.

4. Micro-teaching for continuing the supervision and evaluation of beginning teachers. It could be used in teacher clinics and workshops.

II. *Hunter College*

Elementary student teachers were compared over a semester period as to gains in observed performance of teaching. It was hypothesized that supervision which utilized kinescope recordings (made from original videotapes) of the student teacher's performance would facilitate his growth more than supervision procedures which relied on verbal recollection of the performance.

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[1] *Micro-Teaching: A Description,* Stanford University School of Education, Summer, 1966.

Three sources of data were 1) analysis of scores on a classroom observation schedule, 2) recorded interviews with student teachers, 3) reactions of the student teaching supervisors.

Findings related to micro-teaching:

A. OSCAR (the observation schedule developed for this project) scores did not find significant differences between supervisory styles—no preference for kinescopes. The authors of the study mitigate this finding by suggesting the following elements jeopardizing the internal validity of the research:

1. Limited exposure of the student teacher to the training method.

2. Limitation of the observation schedule, OSCAR.

B. Both students and supervisors expressed positive opinions about the value of kinescopes in training student teachers.

Supervisors additionally claimed that their own perception of the teaching process was sharpened and that the immediacy of the recorded experience aided their efforts to assist the student teacher.

III. *Brigham Young University*

Some 200 micro-teaching sessions have been conducted with students in teacher education since spring semester, 1966.

A. Preservice. It has been found that

1. Students react positively to the technique—ninety-five percent of those who have received micro-teaching training judge the experience to be "valuable" or "very valuable."

2. Students do not see themselves as performing atypically because of the "threatening" nature of the micro-teaching experience. This expression concurs with that of the micro-teaching instructors: anxiety reactions among micro-teachers at Brigham Young University are essentially negligible. Only in the initial experience, and rarely then, is evidence of performance-distorting reaction found.

3. Students who have received micro-teaching rate themselves as more

nearly like the "ideal teacher" than do students who have not received micro-teaching.

4. Experience at Brigham Young University corroborates the conclusion suggested by the Stanford research: observing a trainee's teaching performance globally is much less valuable than observing, and helping him to observe, one or two specific, discriminable actions within the teaching act. Further, the micro-teacher must prepare his brief lesson to achieve a similarly specific skill or competency.

B. Inservice. Micro-teaching has been used in Utah school districts as an inservice training device.

The following tentative conclusions are summarized from the projects conducted by Brigham Young University.

1. A taped micro-teaching session conducted in the public school setting is more threatening to experienced teachers than it is to college students.

2. Most experienced teachers overcome the fear and threat of micro-teaching. This usually occurs after the first or second micro-teaching experience.

3. After the initial threat of micro-teaching has passed, experienced teachers improve rapidly in achieving a specific discriminable skill or competency.

4. Experienced teachers who micro-teach and then observe the videotaped playback of their performance privately, using an observation guide sheet to direct them, can be helped to make significant changes in their teaching behavior.

Answers to four questions are being sought in investigations at Brigham Young University:

1. How does micro-teaching affect a teacher's concept of himself?

2. Under what conditions does the micro-teacher receive the most effective help from the critique of his efforts?

3. How can micro-teaching be used best in the professional training of a teacher; what kinds of experiences with micro-teaching are desirable at what point in the training?

4. What is the result in teacher performance when micro-teaching is substituted for all or part of the traditional student teaching experience?

Research should provide practitioners with intelligent direction. It should be noted that 1) micro-teaching research, while significant, is almost nonexistent when compared with research done on many other innovations and 2) many universities and school districts are purchasing videotape recorders, as they have other gadgets, with insufficient understanding of their objectives to insure reasonable success in teacher training projects.

When utilized to deal with specific teaching actions, micro-teaching, including videotapings, has a tremendous potential for changing the behavior of teachers.

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# VIDEOTAPES IN SIMULATED EXPERIENCES AND SUPERVISION IN COUNSELOR EDUCATION

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Simulated experiences in one form or another appear in common use in counselor education programs about the country. Role playing by counselor education students and professors has served students in gaining a basic understanding of the counseling relationship and the "feel" of being a counselor. The writers have been interested in the use of videotape as an aid in this activity and have made some use of this medium in their teaching.

Videotapes have been used in an introductory course in counseling theory and in the supervised counseling practice (practicum). In the introductory course students are "paired" as a student team to work together in simulated counseling experiences as the initial step from theory into practice. Videotapes of students assuming the role of counselee and counselor are recorded for class discussion. These tapes afford the class with an experience very near that of actual counseling. As they assume their counseling roles for the simulated experience, counselors are encouraged to be open and genuine. They reveal their own problems of becoming counselors as well as working with situations where "structured problems" are presented. To supplement the videotape, an additional instrument has been devised with a system of lights and remote foot controls for the counselee and counselor. The counselor and counselee each has a control to excite a separate signal light. This device is used to illustrate the effects of such variables as empathy, interpretation, threat, etc., as they occur in the counseling interview. The person viewing this live is then made aware of the presence of such variables as he sees the ramifications of variables in the counseling relationship. For example, at times the counselor's light will indicate that he is not experiencing the degree of empathy that he desires; however the counselee's light may indicate that he is experiencing empathy. Such an experience serves as a positive reinforcement for beginning counselors who frequently experience feelings that they must be "in tune with the counselor" at all times for the session to be effective. While such a goal is desirable, it is helpful for the student counselor to have some reassurance of success without complete achievement of the goal. The videotapes showing such situations as these serve as an objective criterion for class discussion. The primary focus is upon the counseling relationship, but the added light signals supplement the communication via videotape. Precautionary steps are taken by the professor to present evaluation responses based upon the presence of lights on or off in the supplementary system. The device does allow the counselor and counselee to extend their communication to areas that do not appear in the regular video or audio signals from the tape.

In the counseling practicum three uses have been made of videotapes: (1) the use of tapes in actual counseling sessions by practicum students, (2) actual taping of the supervisory session, and (3) allowing the practicum student to role play the part of his client in an effort to gain insight into the dynamics of his client's behavior. The uses have been limited, and the third one on a very limited or exploratory basis.

## ADVANTAGES OF VIDEOTAPES IN SIMULATED AND SUPERVISORY EXPERIENCES

Chief advantages of the use of videotaping as an aid in simulated experiences in the introductory theory course include the following:

1. The student counselor sees and hears himself as others see him, thereby gaining new insight and understanding of himself as a person and future counselor.

2. Tapes serve as a means of positive reinforcement for the student counselor. It is true that he sees his mistakes, but he may also see progress in the counseling relationship in spite of these mistakes.

3. Simulated video experiences allow the students to make comparisons with earlier video recordings in an effort to improve their skills, note changes in behavior and genuineness of the relationships being established.

4. Class discussion of pre-recorded counseling sessions allows students who were recorded to interact with other students about feelings and attitudes manifest in counseling sessions. The pre-recorded sessions result in a saving of class time for discussion and interaction rather than for use in the role-playing activity.

The practicum in counselor education is a second level of practice for the student counselor. It is in this course that he begins to work with actual cases in counseling. The contributions of the videotapes in the practicum supervisory sessions are these:

1. Videotapes of the supervisory session provide the practicum student with an opportunity to see himself in counseling. The interaction between student and supervisor acts as a helping relationship for the development of the student as a future counselor and as a person. Videotapes afford the supervisor an opportunity to view himself as an agent in the growth process of the student counselor.

2. Videotapes provide students with an opportunity to re-experience and criticize, under optimum conditions, an actual counseling interview with a supervisor. Video adds a new dimension to the usual critique for student counselor over the traditional audio tapes used by supervisors. Many feelings and much of the interactive process are lost or forgotten with the passage of time. The videotapes serve as an optimum curator of the stimulus and allow for recreating the actual counseling session for the supervisory conference.

3. Videotapes provide in some instances opportunity for the student counselor and his client to re-experience a previous counseling session. Stopping the tape, clarifying content, feelings, and other behaviors may become an aid to further counseling. Videotaping the latter session may afford the student counselor and his supervisor new insights into the problems faced in the counseling process and relationship between student counselor and his client.

## MAJOR PROBLEMS ENCOUNTERED

1. As in any simulated experience the problem of artificiality arises. The initial reaction of many students and professors to tapes is negative and in part due to the seeming artificiality of the setting and counseling relationship. The problem of artificiality, however, can be dealt with from two points of reference. First, the student dislikes viewing himself in a "fake" or artificial role; thus the artificiality serves as a negative reinforcement and encourages him to be more genuine in future sessions. The professor may discourage artificiality and support and encourage students to be open and genuine in their efforts of assuming the counseling roles, counselee and counselor.
2. There is a reluctance on the part of some individuals to make use of any media of a mechanical nature. The reluctance is prevalent in the use of videotape equipment and may be due to the negative stereotype that most professions have of the medium. These negative

feelings can be dealt with by having the service of an operator to handle those routines of setting up the equipment prior to the recording session. Short training sessions for persons to learn how to acquire the minimum skill necessary to operate the equipment are helpful.

3. The demands for maintenance require that the skills of a technician be available on very short notice to maintain and to keep the system operational. While this may appear as a problem, most educational institutions have access for services of a technician within the institution or through a contractual arrangement with an outside agency.

4. Tapes are costly. When tapes are not to be reused but kept throughout a term for each student, a considerable capital outlay is required to provide such a supply of tape. Proper storage and handling can increase the life of such tapes and thus result in eventual savings.

## CONCLUSION

Although the writers have had limited exposure to the use of video recording in the area of counselor education, our general experience has been positive and stimulating. Video recording of the counseling session has thus far proven to be a very valuable tool in research projects. The use of the video medium will continue to aid researchers who wish to investigate (1) various variables and their interactions as they manifest themselves during the counseling experience, (2) the development of the individual as a counselor, and (3) the counselor education program.

The supervisory role of the counselor educator has gained a new perspective as a result of video recordings. The counseling experience is more adequately preserved and available during video replay. Students in training may look forward to viewing counseling sessions from satellite viewing stations as well as specific cases from a video library. As the cost of recording equipment and tapes continues to decrease, we may look forward to the day when all practicum students videotape their counseling sessions and submit these tapes to their professors.

# BUILDING A SIMULATED LABORATORY FOR TEACHER PREPARATION

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Using the medium of television, it is possible to recreate life-like classroom problems which teachers face. Supplemented by other media such as slides, magnetic tape, and written materials, a complete school setting may be created and used as a laboratory experience for the training of teachers. One such program now known as the "Teaching Problem Laboratory" began to develop at the State University College at Brockport, New York, in 1964.

In April, 1965, in an effort to improve its teacher education product, a committee in the Department of Education conducted a follow-up study of its June, 1964, graduates. Employing an instrument called the "Perceived Problems Inventory," 284 first-year teachers were asked to respond to the severity of 117 teacher problems reported in the literature.[1] An analysis of the 163 returns indicated that thirty-two problems were significant at the .01 level.[2]

With this information in hand and supported in part by a Cooperative Research Grant, a team of faculty[3] began to analyze the thirty-two problem statements and to consider how they might be reproduced. The versatility which videotape recordings permit coupled with the relatively low cost of the process compared with film production led to the employment of that technique.

As each problem statement was studied, it became obvious that some problems were more adaptable to presentation via videotape recordings than were others. For example, it would not be difficult to show a "constantly disrupting child"; on the other hand, it was vexing to illustrate "having students see relationships between undesirable behavior and its consequences." After long and sometimes strained discussions, it was decided that only ten of the problems could be reproduced suitably using videotape recordings.[4]

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[1] Credit is acknowledged to Seymour Lemeshow, Stanley Dropkin, Marvin Taylor, Marjorie Smiley, Arthur Sprague.

[2] A few of the problems which were "significant" were:
–handling the constantly disrupting child
–not knowing what to do with children who finish work early
–having trouble interpreting a child's real ability to his parents.

[3] Dr. Frank Broadbent, Mr. Roy Bubb, Dr. Mel Smagorinsky, and the author.

[4] The remaining problems were reproduced as either role plays or written incidents.

Scripts were written and performed admirably by a fifth-grade class in the Campus Demonstration School. Each "take" required about one and one-half hours of rehearsel and two hours before cameras. The use of videotape contributed to a relaxed shooting environment, since the children knew if they made a mistake they simply could begin again.

Several technical decisions already had been made. First, the camera was to be the teacher, i.e., the teacher never was shown but merely followed the classroom action. Second, the teacher's voice was not to be heard since later both male and female students would be asked to take on the role of the teacher. As a result, written dialogue was superimposed at appropriate times during the action. For example, at one point of a boy's misbehavior the title appears, "Jack Brogan, take your seat and stay in it!"

In this way videotape recordings running from 45 seconds to nine minutes in length were made by children and faculty members for the following problems:

1. Handling the constantly disrupting child.
2. Handling children's aggressive behavior toward one another.
3. Handling students not motivated to work on class assignments.
4. Not knowing what to do with students who finish work early.
5. Involving many of the children in group discussion.
6. Being unhappy with classroom clerical work.
7. Having children do independent work quietly.
8. Providing appropriate work for the class while at the same time working with a small group or individual children.
9. Being impatient with students.
10. No knowing how to deal with children's reading problems.

Some of the usual technical problems of tracking and slipping occurred which caused several takes. Immediate replay of a scene determined whether this was desirable or necessary.

In order to make the "incidents" more portable, they later were recorded on kinescope and edited to remove as many technical flaws as possible. Obviously the kinescope recording was of lower quality than the original videotape recording.

At the same time that the problems were being recreated, the project team was building a hypothetical school and school district in which the problems would be made to occur. Colored 2 x 2 slides were made into filmstrips showing a community and an elementary school setting. Magnetic tape recordings provided dialogue and oriented the teacher-player to his or her new job as a fifth-grade teacher. Cumulative record cards, a faculty handbook, curriculum guides, sociograms, and samples of children's work were reconstructed for use by the teacher-player as needed in the problem-solving incidents.

In all, a rather extensive laboratory was created in which a participant could assume the role of a beginning fifth-grade teacher and engage in analyzing and attempting to solve critical teaching problems.

Early results from field tests are encouraging. Participants find the simulation experience engaging both intellectually and psychologically. They report that they consider the technique far superior to the usual components of a teacher education program.

## PROJECT IMMORTALITY

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A teacher affects eternity; he cannot tell where his influence stops.
—Henry Adams

Recently I saw a highly imaginative play entitled "Project Immortality" by Loring Mandell. The plot was constructed around the idea of collecting and recording all the significant thoughts, concepts, notions, etc., of an eminent physicist. Full use of computer technology was being utilized before his untimely and ironic death by an incurable disease.

The play speaks to a timeless urge in man: the desire to leave something of himself behind. Henry Adams' words take on an intriguing meaning when measured against the promise of our emerging technology. The thought that a Socrates, a Kilpatrick, or an Oppenheimer could be "frozen" in time and subsequently "resurrected" by future generations is even more exciting than the alchemists' dream of converting lead into gold. Our potential needs only be matched by our imagination and energy.

The idea of filmed lectures by distinguished teachers, scholars, and practitioners is not a novel one. There are notable examples of the filming of "historic" figures and events. Both public and commercial television provide us with examples of the potency of filmed and videotaped lectures and interviews. The scope of the material, however, is as limited as its application. The attempts have been largely unsystematic.

There is an urgent need for the systematic utilization of emerging technology to the problems of education generally, and to teacher education, specifically. The imaginative use of videotape has the potential of extending the influence of the great teacher to millions of people. (By teacher, I do not intend to exclude those people who do not belong to the teaching profession.) In fact, we urgently need to tap the teaching power of the "nonteachers." Stated another way, we can enlarge education by the fuller utilization of diverse human beings who have the capacity–if not the professional license–to "teach." (Teaching–seen as a transactional process–can include a whole array of people.) Nowhere is this more evident than with our culturally disadvantaged.

With the advent of inexpensive, portable, easily-operated videotape players, the educational world could be profoundly changed. The quality of education from elementary school through college would be raised. The gaping chasm between the "have" and "have-not" schools and colleges–while not filled–would nonetheless be bridged.

We would be remiss if we failed to consider the impact our electronic technology will have on our traditional concepts of the role of the teacher. Quite obviously, the promise of technology cannot fully be realized unless we apprehend new educative functions for the teacher. To this end we will need to reassess the teacher's place in a curriculum shaped by science and technology.

Unfortunately, we do not have ideal videotape machines and recording equipment, but this should not deter us from beginning to build up videotape libraries for the "diffusion" of teachers and scholars. The relative primitive state of our technology should not keep us from considering its potential for the individualization of learning.

Presently the technological developments, like Hamlet's cloud, are no larger than a man's hand. But the rapid pace of man's hardware inventions may catch us with our imaginations down. We will need to project ourselves into a future which our technology will shape. It is heartening that groups such as the Multi-State Teacher Education project are beginning to do this.

There are many outstanding teachers in our universities, small colleges, and in "visible" and obscure high school and elementary classrooms throughout the country. There are men and women who have profoundly shaped their respective fields. Some are in advanced years and will shortly be gone, their claim to immortality a mere whisper—tragically lacking the amplification technology could give their voice and spirit.

Not only will students have the benefit of a wide range of substantive "content" through the use of taped lectures, but the student-of-teaching will also enjoy an expanded repertoire of affective "content." The student-of-teaching will be able to scrutinize the teaching styles of more good teachers than would be possible in several lifetimes without electronic technology.

Donne's words are prophetic: the bell tolls for all of us. The needless loss of one great teacher (because we failed to use our technology to full advantage) is beyond measure. We now have the capability to preserve our teachers to perpetuity. M-STEP could be a force in launching "project immortality." Or perhaps the challenge will be taken up by a consortium of colleges and universities, or a public or private foundation. It is possible that state education agencies could become the initiating and coordinating force.

The mechanics for an operation of taping distinguished lecturers will need to be worked out. Of paramount importance will be the realization of the unparalleled promise the creative use of videotape offers.

The dream which M-STEP has fashioned—of easy accessibility to great teachers—will surely harden into reality. The Rubicon has been crossed.

The question now is when will our promise catch up to our hopes.

## GEORGIA'S INSERVICE EDUCATION PROGRAM IN READING

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A series of videotapes on the teaching of reading was viewed by more than 15,000 of Georgia's elementary and secondary teachers during the 1964-65 school year, and uncounted others viewed re-runs of the series in 1965-66 and in 1966-67. Consisting of eighteen thirty-minute programs, the series was designed to help teachers in school groups to evaluate their present programs and to give them guides for needed changes.

A joint undertaking of the Georgia State Department of Education and the University of Georgia, the programs were aimed toward school viewing groups rather than toward individuals. Discussion leaders were selected in each school prior to the beginning of the series, and leaders were briefed by television a week prior to the starting of the programs. Leaders had the tasks of briefing participants in their viewing groups a few minutes before the program began and then of leading a discussion following the telecast. The aim of the latter was to focus program content on local school reading problems.

Each viewer was furnished a listening-viewing guide by the discussion leader during the briefing period. That guide contained major points to be covered by the videotape and left space for notetaking. Occasionally, additional items such as rating scales of reading practices were included on the listening-viewing guide to stimulate participants to evaluate their own programs in terms of what was suggested in the telecast.

Discussion leaders were furnished a discussion leader's handbook. Within that publication were duplicates of the eighteen individual listening-viewing guides and suggested activities for each telecast. Leaders were urged to plan their own follow-up activities, but a number of possibilities were included to aid the leader. For each telecast, several suggested readings in professional books on reading were given. These were based on eight references which viewing groups were asked to use if they wished further information on the topic of discussion.

Programs were telecast on a weekly basis with each program being run two days a week. For example, during the first year, the telecast was presented on Tuesday from 3:30 to 4:00 and then repeated the next day from 4:00 to 4:30. Viewing groups could select the time most convenient for them. All educational television stations in the state ran the series. This varied from two stations the first year to four the third year.

Topics of telecasts included guides for a good reading program, teaching word recognition skills, teaching comprehension skills, giving an informal reading inventory, and many others. A total of thirteen topics made up the eighteen tapes.

Videotapes have since been made into kinescopes and are available for use to school groups within the state.

Though no systematic evaluation of the series was undertaken, feedback from viewing groups indicates that the program did generate interest in the improvement of reading instruction. Another indication of interest is that teachers have requested that the series be shown again in 1967-68 and that college credit be given to participants. All previous use has been on a noncredit basis. Plans are underway to enlarge the series and to add supplementary activities that will permit college credit to be offered.

## MATHEMATICS INSERVICE TRAINING IN GEORGIA VIA TELEVISION

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and

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The University of Georgia received the 1967 Distinguished Achievement Award for Excellence in Teacher Education from the American Association of Colleges for Teacher Education for the program described in this article.

An inservice institute in mathematics for elementary school personnel was conducted in 35 centers throughout the state of Georgia during the academic year 1966-67. A total of approximately 1,100 elementary and junior high school teachers and administrators participated in the program, which was supported by grants from the National Science Foundation and the Southeastern Education Laboratory in cooperation with the University of Georgia, the Georgia State Department of Education, and 45 school systems.

### THE PROBLEM

Attempts to improve school instruction must be aimed at teachers of all levels, from those preparing to be tomorrow's teachers to those now teaching in public school. The plight of the latter group, especially those responsible for elementary and junior high school mathematics, is a problem throughout the nation. With inadequate or outmoded preparation, many of these teachers are being asked to teach mathematical concepts completely alien to them. Without a large-scale program of reeducation for these teachers, better mathematics instruction for children becomes merely a dream of the future.

Thus the problem explored was to determine the feasibility of using educational television with adjunct problem sessions to adequately retrain a large number of teachers. Experience of the institute staff in a similar program for 500 teachers the preceding year, which did not use educational television, led to the design of the institute herein described.

## DESCRIPTION OF THE PROGRAM

After previewing several television series for teachers of mathematics, one developed by Robert Kalin and George Green of Florida State University was selected. This instructional package consists of 28 half-hour videotapes and an associated textbook. Each lesson in the text is divided into the following sections: (1) pretape exercises, (2) outline of the television lesson, (3) posttape exercises, and (4) homework. Additional sections include a summary of each lesson, historical notes, and references to selected text series and teacher training texts.

Instructors for the institute were selected from a cadre of outstanding college, junior college, and secondary school teachers throughout the state. All had earned a master's degree in mathematics and most had completed at least an additional year of graduate study. Instructors attended an orientation program held on the campus of the University of Georgia near the end of the summer of 1966, and three additional meetings were held on Saturdays during the academic year.

Participants attended weekly meetings between September, 1966, and May, 1967; each session was scheduled for one and one-half hours. Each class chose its own time of meeting from one of four possibilities, the TV portion of the lesson being repeated four times each week. The in-class time was divided into three half-hour segments: pretape; TV lesson; posttape.

Institute participants were able to earn undergraduate or graduate credit for the University of Georgia course, Basic Ideas of Arithmetic. In this course, emphasis is placed upon the structure, concepts, and ideas of elementary mathematics rather than upon computational skills of arithmetic. Tuition and fees were not charged to participants, and textbooks were supplied by the grants supporting the program; however, travel costs were not provided.

## RESULTS

At the time of this writing, data are being collected to measure the effectiveness of the institute program compared with the following: (1) on-campus instruction in the same course, (2) inservice instruction during the previous institute which did not include the use of television, and (3) mathematical understandings of children in classes taught by participants and nonparticipants. Pretests and posttests have been developed and administered to participants, samples of nonparticipants, and children in classes taught by these samples.

Even though all data pertinent to the major hypothesis have not yet been collected or processed, certain observations now appear to be valid. These observations should be of value to anyone planning a similar activity. They are

1. The use of a state television network and adjunct instructional sessions is effective in teaching a large number of teachers.

2. The entire operation when measured in terms of cost per student is extremely efficient.

3. The program produces an interesting by-product, namely the development of specially trained instructors who are locally available for further inservice programs.

The Georgia inservice mathematics institute was originally envisioned as an exploratory program which could serve as a model for other states and other disciplines in the inservice education of teachers—particularly through the use of educational television. The feasibility of administering such a program has been demonstrated; the research evaluation will determine its effectiveness.

## TELEVISION AND TEACHERS INSERVICE

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From the beginning of educational television, its proponents have averred that one obvious use of educational television systems would be to offer teachers on the job an opportunity for continual professional growth. Indeed, there have been those in the profession of education who were violently opposed to the use of television for the instruction of pupils and yet highly favorable to using the medium for the teaching of teachers. As a result, in nearly all systems where television is one of the power tools of education teachers have been taught with the assistance of television.

As massive changes in curriculum have occurred because of national curriculum development efforts, both the school administrator and the school book publisher have begun to understand that the key to implementation of these changes lies in updating the hundreds of thousands of teachers on the job. NDEA and NSF institutes are part of this effort, but increasingly it has become clear that the task of retraining teachers or of simply keeping them abreast of all that is going on in educational change is all but overwhelming.

Initially, television was used in this effort to reach teachers because of its capacities for recording, storage, and distribution. These are qualities television shares with film, but because it is cheaper to produce it has been more widely used than has film. Simply put, in most efforts television has been used to bring the one expert in the studio to the many teachers scattered out in the schools, thus reversing the time-honored educational process of asking the many to come to the one. State departments of education, schools of education, publishers, and school districts have all used television in this way to overcome the problems of distance between teacher-learners and teacher-teachers.

When videotape recording is added in such a context, time as well as space relationships can be altered; the one can be brought to the many time and time again.

Instructional resources for inservice are not equally divided among school districts or among states. Through television it is possible to extend these resources to districts which otherwise would not receive them and to make scarce people available almost on call. As a device, then, for altering space and time relationships, television has already made a real contribution to teacher inservice opportunities.

For the most part, these efforts in using television for inservice training have provided the two conventional forms of instruction, i.e., either the inspirational lecture on, say, "The Characteristics of a Good High School Program" or a series of lessons on "Modern Mathematics for the Elementary Teacher." And, characteristically, these programs have been offered in the preschool orientation sessions for teachers or at 3:15 in the afternoons and on Saturday mornings. Also characteristically, the studio presenters in these programs have been college professors, curriculum specialists, or state department of education supervisors.

In other words, to a very large extent the medium of television has been adapted to the forms, systems, and traditions of teacher inservice, and teacher inservice opportunities have not been vastly modified because of the medium of television.

No one can deny, I think, that the very existence of commercial television has vastly modified the ways in which we Americans spend our leisure time. The motion picture business was wrecked and then rebuilt because of television. Professional baseball is on shaky ground, and professional football is "in solid" because of television. And former Vice President Nixon can make some very personal observations about the power of television in politics.

There is an inevitability, then, that television will affect the modes of teacher inservice. It has already begun to do so. Even in its simplest form of recording a lecture and distributing it widely it has already done so. Using television imposes a discipline on inservice efforts which has been all too lacking heretofore. To coordinate educational television production and scheduling with useful viewing and follow-up requires a level of planning not often found in teacher inservice efforts. And the commitments of time, effort, and money when television is involved make inservice planning committees peculiarly conscious of the necessity for long-range planning and resource development.

Furthermore, involvement in television for inservice seems particularly to objectify the need for regarding teachers as learners with nearly all of the characteristics of the pupils they teach. To record the college lecture on understanding modern mathematics and to distribute that lecture to teachers at 3:30 p.m. via educational television is a first step and a valid one in inservice efforts. But inevitably all concerned eventually get restive about stopping at that level.

Television people complain that "the talking face" is not good television. Directors of instruction propose that merely lecturing is not a good example to set for teachers. The tired teachers on the receiving end of the program ask how they can translate that lecture into actual classroom practice tomorrow for their fourth graders. And the studio teacher, often seeing himself for the first time, is shocked to discover that that is the way he sounds, or looks, or acts.

The great danger at this point is that all concerned will throw in the sponge and go back to doing the same things without television, not understanding that the fault lies not in the medium but in ourselves. The far better hope is that all concerned will re-study what it is they are about in teacher inservice. If television serves to bring about such thoughtful reconsideration, it will have all been worthwhile.

Because such a thoughful reconsideration may eventually lead to a careful examination of teachers as learners—to an assessment of their real needs as they perceive them and to their individual differences and competencies—hopefully that reconsideration may lead to the design of television and other materials related to those needs and differences. At best, it may lead to the development of materials particularly adapted to the television medium and tried out and tested with representatives of teachers and then modified in the light of that trial.

Hopefully, the thoughtful reconsideration of teacher inservice programs may lead to the development of some great teachers of teachers who can be shared through the medium of television. And it may lead to the development of well-designed, learner-centered, validated materials, both print and non-print, which together can reach out to teachers where they are in time, in space, and in need.

All this is simply to say that using television for teacher inservice has thus far largely revealed the shortcomings of traditional teacher inservice efforts. It is abundantly clear that materials for teaching teachers are as complicated and expensive to develop as are those for teaching pupils. Despite the fact that using television usually adds to cost, it may well be that the combination of resources which television demands and the distribution of those resources to more teachers than can otherwise be reached will, in the long run, prove to be the most efficient way to enhance the quality of inservice education of teachers.

Still largely unresolved are the ways in which inservice growth opportunities can be afforded to teachers, except just after school and on Saturday mornings, and how best to organize these opportunities so that teachers may get some reward, either professional or financial, for having participated in them. Technology can be applied in the management of schools in such a way that lockstep scheduling of teachers' time can be broken as has been that of pupils, provided administrators are willing to make the commitment to technology and to put it to work. But technology cannot help much if it is always asked to adapt to conventional ways of doing things.

Those who would start down the road of finding where television fits in teacher inservice education should know that that road is a bumpy one, full of pitfalls, and characterized by many branches leading to dead ends. But it is also a road which can lead them to enriched understandings of the teacher as a learner and to the exciting potentials for assisting these learner-teachers to become greater teachers of learners.

# TELECOURSES FOR INSERVICE EDUCATION OLD HATS AND NEW

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Probably the cynical adage, "nothing new under the sun," applies to "Telecourses for Inservice Education." What is thought to be innovative in Cedar City, Utah, may be old hat in Hyattsville, Maryland. Be that as it may, let's try on a few old hats for size at the local haberdashery.

## THE NON-COURSE INSERVICE TELECAST

A television broadcast facility provides an excellent means for administrators, supervisors, and subject-area specialist supervisors at both the state and district levels to reach principals, teachers, and other school staff personnel. Such contacts through television are not necessarily classified as courses. They may consist of one or several telecasts. Through television, art and music supervisors can give appropriate help to classroom teachers in holiday art and music or describe plans for a district-wide art exhibit and music festival. A district department of health services can present a special telecast at the beginning of the school year to acquaint principals, teachers, and cooperating PTA members with procedures to be followed in administering the Snellen Eye Screening tests. State math and social studies specialists can reserve one or two telecast periods early in the school year for introducing new state guides. The director of the school lunch program using television may give a film and graphic presentation on current practices or report a particularly fruitful convention. Using the television medium, a district superintendent can communicate regularly with his entire staff.[1] Television may be used to preview sample lessons from new courses giving large numbers of teachers an opportunity to make evaluations and recommendations and involving them in the selection process.

Inservice telecasts may be recorded on kinescope or slant-track videotape for extended use in conferences, workshops, and institutes.

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[1] Since 1959, the Utah State Board of Education and participating school districts have made over 600 non-course inservice television presentations in such widely diverse subject and service areas as health and physical education, foreign language, science, pupil personnel practices, business and distributive education, testing, instructional media, industrial-technical education, homemaking, television utilization, American values, and student self-government. Telecasts have been scheduled daily during the 3:40–4:10 p.m. time block and repeated early in the morning.

## INSERVICE COURSES A LA MODE

The use of television for inservice courses has been in vogue long enough to see the development of similar patterns in many school systems across the country. Teachers in Utah schools, like those elsewhere, have tuned in periodically to credit and noncredit offerings in such subject areas as new math,[2] "English Fact and Fancy,[3]" American economy. "Making Literature Come Alive,[4]" state history,[5] science methods,[6] art instruction,[7] "Parlons Francais" (French) for teachers,[8] the teaching of foreign language, and Spanish for secondary schools.[9]

## NEW BANDS FOR OLD HATS–INNOVATION?

Two Utah school districts may have felt a tinge of innovative pride two years ago when large numbers of teachers completed a noncurriculum course for credit in "Medical Self-Help."

Chances are the Rocky Mountain Education Laboratory and the University of Utah achieved a first with a six-program series produced this year for school personnel on the operation and utilization of portable videotape machines in the classroom. The Rocky Mountain Education Lab has also produced a "Discovering Arithmetic" course. The course was used recently with excellent results by teachers in the Moab area. Television demonstrations were taped off the air and rebroadcast over a community cable system tied into a local production facility. Once a week all participating teachers, using a telephone hookup, conferenced with the TV teacher 250 miles away in Salt Lake City.

Considerable attention will focus on Granite School District's projected series for teachers and students, the use of television as a programmed learning device. Still in the planning stages, the project will probably center around teaching economics in the elementary grades and will use a keyed workbook to provide immediate reinforcement for student responses to questions posed by a TV teacher.

The Southwest Media Center, a seven-county, Title III project centered in Cedar City, Utah, has designed an unusual program for bringing some instruction to both students and teachers. Inservice telecasts will be produced and recorded at the center for later release by means of videotape and distribution equipment installed in a bus and transported to outlying schools not receiving an off-the-air television signal. It will be a television version of the traveling bookmobile. Teachers in a small cluster of schools in the northeastern part of the state will be using a similar system. Since there is no available educational television signal in that area, inservice telecasts will be mailed to schools and played back on a convenient local schedule, using portable videotape machines and classroom distribution monitors.

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[2] *"Sets and Systems"* was produced by WETA-TV, Washington, D.C., and was broadcast by the Utah Network for Instructional Television in 1965–66.

[3] Also produced by WETA-TV, Washington, D.C. Telecast by UNIT in 1966-67.

[4] Produced by the University of Utah. Distributed by UNIT, 1966-67.

[5] Produced by KUED, Channel 7, Salt Lake City, 1964-65.

[6] Produced by Granite District, Salt Lake City, 1964-65. Broadcast statewide by UNIT, 1965-66.

[7] Granite and Salt Lake districts have produced several inservice art courses. The latest Granite series was broadcast by UNIT in 1965-66.

[8] *Parlons Francais* teachers' programs produced by Heath de Rochemont. Used by UNIT between 1963 and 1966.

[9] Foreign language courses were produced by the Utah State Department of Public Instruction and aired by UNIT in 1965–66.

A lot of interest and some excitement has been created in Utah by the "California Project Talent" programs developed cooperatively by the Los Angeles City Schools, California State Department of Education, and the United States Office of Education. Course samples have been previewed by curriculum specialists and used in workshops on creativity. The series will be scheduled by UNIT for broadcast next year over the state system.

Educators have merely scratched the surface in their efforts to employ television as a vehicle for teacher training. We have described rather superficially the meagre experiences of one state system. Tomorrow and the day after will see the genesis of many innovative practices–new trimming for old hats.

## AMPLIFIED TELEPHONE AS A TEACHING MEDIUM: DESCRIPTION OF AN INSERVICE SCIENCE SEMINAR [1]

Designed as an inservice training program for college science teachers, the seminar called "The Improvement of Science Teaching" was a noncredit course coordinated from the Stephens campus with six other colleges in the network participating. Dr. Alfred Novak was the master teacher. In this role he arranged for and introduced the speakers at each of the thirteen weekly sessions. Following each speaker's lecture (lasting approximately 30 to 45 minutes) he asked for questions from the individual colleges, led discussions, and summarized. The "students" actually were college science and mathematics teachers in the participating institutions. At the same time, the institutions invited to their campuses science and mathematics faculty members at other nearby colleges—and at selected nearby high schools—to participate in the seminars. The result was that on the seven campuses nearly forty-five educational institutions were represented.

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[1] By permission of Dr. Charles F. Madden, Coordinator, Amplified Telephone Projects, Stephens College, this article is reproduced from Jolly, Joan, and Madden, Charles F. *Amplified Telephone as a Teaching Medium,* Stephens College Educational Report: I, Columbia, Missouri, March, 1965, Pages 9–10, 14–15, 36, 37, 41–42, 56–58.

Guest lecturers for the Science Seminar included three Nobel Prize winners: Dr. George Beadle, University of Chicago, who spoke on the "Molecular Basis of Heredity"; Dr. Hermann Muller, University of Indiana, on "Genetic Aberrations"; and Dr. Peter B. Medawar, British National Institute for Medical Research, on "The Future of Man."

The list of outstanding speakers and their subjects also included:

Dr. John G. Kemeny, Dartmouth College, "The Role of Mathematics in Science."

Dr. Joseph J. Schwab, University of Chicago, "Scientific Inquiry."

Dr. Earl A. Evans, Jr., University of Chicago, "How Life Began, Biological Organization."

Dr. Alfred Novak, Stephens College, "The Problems of Multicellularity."

Dr. Irwin Sizer, Massachusetts Institute of Technology, "Protein Architecture, Enzymatic Systems."

Dr. Herbert Goldberg, University of Missouri, "Competitive Molecules --Antimetabolites."

Dr. Harry Sisler, University of Florida, "Chemical Bonds and Organic Molecules."

Dr. James Bonner, California Institute of Technology, "Nuclear Organizations."

Dr. Philip Siekevitz, Rockefeller Institute, "Cellular Dynamics."

A structured discussion for each lecture session was set up by Dr. Novak, varying the schedule so participating colleges rotated positions in the question periods. Time was allowed for free discussion with the lecturer and "students" in the classroom network. In addition, Dr. Novak provided a summary for each session and an extra course-summary session the week after the final lecture. (Sample structured session is given at the end of this article.)

## SCIENCE SEMINAR

Those institutions participating in the Science Seminar were: Drury

College, Springfield, Missouri (Dr. S. D. Larson); Kansas Wesleyan University, Salina, Kansas (Mr. Charles Creager); Langston University, Langston, Oklahoma (Mr. James A. Simpson); LeMoyne College, Memphis, Tennessee (Dr. W. W. Gibson); Morehouse College, Atlanta, Georgia (Dr. H. C. McBay); Wilberforce University, Wilberforce, Ohio (Prof. E. L. Harris); and Stephens College (Dr. Alfred Novak).

There were thirteen sessions in the Science Seminar under the direction of Dr. Alfred Novak. The class met from October 1, 1963, through February 4, 1964. The sessions were held on Tuesday evenings at 7:00 p.m. CST.

During the opening session initiating the project there were greetings to the participants from President Seymour A. Smith of Stephens College and Dr. Alvin C. Eurich, Vice-President of the Fund for the Advancement of Education, both of whom were in New York City.

The lecturers in this series covered a wide range of scientific materials from the opening address by Dr. John G. Kemeny on "The Role of Mathematics in Science" to a profusely (and beautifully) illustrated lecture on "Cellular Dynamics" by Dr. Philip Siekevitz. Most of the material was descriptive of recent investigations being carried on by the speakers themselves and was, therefore, timely, interesting and, sometimes, provocative. Those who attended the seminar were particularly interested in the contradictory points of view expressed by the two Nobel prize winning geneticists Dr. Hermannn Muller and Dr. Peter Medawar when discussing the future of man.

Dr. Novak conducted two complete sessions. During the first he presented a paper on "The Problems of Multicellularity," and during the second he moderated the verbal evaluation of the tele-lecture course.

During the Science Seminar we initiated the procedures of "Structured Discussion." To avoid confusion during the question period, we issued from the coordinator's office a time schedule for each session. This sheet contained a listing of the order in which questions would be accepted from the participating institutions. The institutions were "rotated" so that each had, at some point, the first question in one of the sessions. This proved so successful that it was made a regular procedure in each tele-lecture course. Only occassionally did we schedule "free discussion." For those occasions we asked simply that the speaker identify himself and get a "go ahead" from the moderator. The teacher of the course moderated each session.

Since this course was for teachers, there were no examinations or papers to be written. After each session the coordinator and the technician were asked to submit evaluation forms indicating, on the one hand, response to the subject matter and, on the other, a description of the technical reception. These forms provided a running critique of both aspects of the program, and many subtle changes were introduced as a result of responses recorded here. We were also able, through these evaluation forms, to gather evidence on the number of participants and the schools they represented.

An evaluation session was scheduled by telephone on January 21, 1964. The conclusions expressed on that occasion are included in the next section of this report.

## ASSESSMENT

The evaluation of such an extensive project must, of necessity, contain comments on many different facets of the program. It can be said, without qualification, that the program was highly successful. The three courses demonstrated that even for different kinds of subjects and for teachers using various instructional methods, the telephone, amplified and provided with additional microphones, can be an effective way of carrying on inter-institutional programs.

Some of the technical difficulties of such a program have already been discussed in this report. The most persistent difficulty, however, can be traced to the personnel. Speakers must be briefed on the use of the telephone—the necessity for speaking distinctly and slowly. Those using the conference set must learn the operation so that the directional microphones may function as designed and so that the circuit noise may be kept to a minimum.

The use of the conference hook-up made it possible for speakers to reach audiences spread geographically throughout the eastern half of the United States. The system made available to eleven small, liberal arts colleges a schedule of guest lecturers that would have been impossible in the budget of any single institution. The project suggested to the participating schools the feasibility of regional networks where faculty of one institution might be shared by neighboring ones. The administrative officers of each institution have expressed considerable interest in adapting the technique to other institutional ventures.

The value of any educational experiment should be measured by the responses of the students. Throughout the three programs described in this report we sought evaluation materials from the teachers or moderators or technicians. As a final session in each course we sought student responses. In several instances the teachers of the courses have summarized responses from their classes. Those included below are typical.

"First, I would like to compliment you on your choice of speakers. I believe one of the major products of the series was the opportunity that our undergraduates had to encounter some of the most outstanding modern biologists in what was really an almost face-to-face situation. The situation was very exciting and dynamic because we knew that we *could* ask questions of these people if we wanted."

*Kansas Wesleyan*

"For me this has been 'Operation Up-date.' I was especially appreciative of the talks given by Dr. Bonner and Dr. Siekevitz. On the whole the level was quite good. I think the mid-session question period was a great benefit in bringing the speaker to the level of the audience—whether he needed to come up or down . . . I've been particularly impressed with the in-the-room feeling that I've had. I've felt as if the speaker were sitting on the platform with Dr. Novak. It has been wonderful."

*Christian College*

In a letter to Dr. Novak after his long-distance lecture-discussion, Dr. Bonner stated: "I thought the telephone session was a marvelous success . . . In approximately a little less than two hours time we were able to talk to, and I hope, transmit some information to, an audience which if personally visited, group by group, would have taken me a week or two to do. Keep it up."

In another letter, Dr. Harry Sisler commented: "I believe that his new technique has some real possibilities in providing opportunities for widespread communication with small college campuses at relatively small cost."

## ADVANTAGES

"Without the telephone facilities provided in this experiment," commented Dr. Madden, "it is highly unlikely that any student—or teacher—would in his lifetime have an opportunity to discuss person-to-person the major ideas of such a distinguished company.

"There are few opportunities for any of us to talk directly and informally with persons whose actions and ideas are shaping our world: winners of Nobel Prizes or Pulitzer Prizes, officials or analysts of the political scene, or writers and thinkers of extraordinary merit. This project has made the ideal possible."

The Fund for the Advancement of Education was especially interested in the telephone lectures as originated at Stephens and used by ten other colleges and universities. Dr. Alvin C. Eurich, vice-president of the Fund, commented: "Such a technique makes available some of the finest teaching personnel to institutions which would normally be limited in attracting to their campus such distinguished leadership." Referring to both master teachers as well as guest lecturers, he commented further that "the development of amplified telephone networks has great potential for more effective and efficient use of our best college and university teachers in the future. This will be essential as mounting enrollment pressures put heavier and heavier demands upon available teaching personnel."

## COSTS

Expenses involved in the 1963-64 experimental telephone lecture series fall into several categories.

During this period telephonic equipment was leased to the schools in the network by local telephone companies. Although local or regional companies installed and leased the equipment to the institutions, all used the same devices developed by the Bell Telephone System. Costs came to approximately $40 per month per school, after the initial installation of $25 per school.

For this series of calls, arrangements were also made to have telephone operators' head-sets in the home or office from which each guest spoke. Costs for these amounted to from $5 to $15 depending upon local situations.

Long-distance charges for each complete conference call, which averaged 45 minutes, ranged from $120 to $225 in the continental United States. The trans-Atlantic call to Dr. Medawar in London totaled $450.

Honoraria for guest speakers were budgeted at $100 each.

All of these costs were paid by Stephens College from the grant funds supplied by the Fund for the Advancement of Education.

Each of the colleges and universities arranged for and provided for its own local classroom teacher and technical personnel without compensation from the Fund or Stephens.

### STEPHENS COLLEGE SCIENCE SEMINAR
A Telephone-lecture Course
(Example of a Presentation)
TIME SCHEDULE

| | |
|---|---|
| 6:55 p.m. CST | All colleges connected in conference call; warm up conversation. |
| 7:05 p.m. | Introduction of subject and speaker. Dr. Alfred Novak. |

**7:10 p.m.** Dr. Hermann Muller
University of Indiana
"Genetic Aberrations"

**7:30 p.m.** (a) Structured discussion of Dr. Muller's presentation. Questions will be accepted from participants in the Seminar by calling on the institutional centers in the following order:

(1) Stephens College, Columbia, Missouri
(2) Morehouse College, Atlanta, Georgia
(3) LeMoyne College, Memphis, Tennessee
(4) Langston University, Langston, Oklahoma
(5) Drury College, Springfield, Missouri
(6) Wilberforce University, Wilberforce, Ohio
(7) Kansas Wesleyan University, Salina, Kansas

(b) Free discussion among participating institutions

(c) Summary by Dr. Novak

**8:15 p.m.** Sign-off.

## RECORDING AND EVALUATING PROGRESS OF STUDENT TEACHERS AT THE UNIVERSITY OF UTAH

EARL W. HARMER, JR.
Professor of Education
University of Utah

Student teaching at the University of Utah is designed as a "professional quarter." This means that the student is presumed to be involved full time with student teaching and a parallel methods course. Fifteen quarter hours of credit are awarded per quarter. It is assumed that the student teacher will not be engaged in any other course work nor any conflicting outside work.

The intent of this organization is to emphasize the student teaching experience as the most influential learning activity in the professional sequence. This plan has been in operation for over ten years and in the judgment of staff and students is an excellent arrangement.

The professional staff is concerned about recording and evaluating the progress of student teachers. The purpose of this article is to indicate the systems now operating to achieve that purpose.

The most common recording and evaluation instrument in student teaching is that of coding devices. The University of Utah has been fortunate in having persons such as Marie Hughes, Robert M. W. Travers, George Miller, and Norman Wallen who have been interested in developing coding devices for classroom instruction. Consequently the Department of Education has had access to some relatively sophisticated teaching competencies codes which have been utilized in the assessment of student teachers. Every professor in the Department who supervises student teaching (this is judged to be the responsibility of major professors; instructors and graduate students are used only as ancillary resource persons) inevitably modifies the coding instrument in terms of his particular interests and competencies. In brief, the coding devices are the result of considerable refinement.

Ordinarily, evaluation of a student teacher follows a full teaching lesson. This means that the evaluator will have an appointment with the student teacher and the cooperating teacher. The teaching lesson will be coded, and the evaluation will include all three individuals–the University professor, the cooperating teacher, and the student teacher.

The second tool for recording student teaching data is that of videotaping. The use of video recorders in the student teaching program is relatively new, at least at our University. Portable video recorders are located in several adjacent school districts. These video recorders are taken into the classroom, the student teacher's work is recorded, and the videotape is later reviewed and analyzed. The primary intent of this effort, of course, has been to modify the student teacher's behavior. Another major purpose of video recording is to preserve student teaching data for subsequent research.

Some members of the staff have made extensive use of audio tapes as a device for recording student teaching. Recording the verbal interaction of teacher and pupil with tape recorders is less of an interference with the ongoing class than the bulkier video recorder. The audio tapes are frequently transcribed and then subjected to analysis via codes. By transcribing the audio recording, it is possible for long-term, thoughtful review of precisely what has happened verbally.

A fourth attempt to record student teaching data has been the University's program of micro-teaching. Micro-teaching at the University of Utah means that the student teacher will video-record with his peers small sections of lessons that are to be taught in the public schools. These micro-teaching sessions have been stored and utilized in the subsequent discussion of what the student teacher actually did in the schools. The intention is to provide a comparison between what the student teacher practiced and what actually occurred.

3

It will be noted from this brief review that recording and evaluating data for student teachers are comparatively haphazard and unsophisticated. The Department of Education is aware of the need to devote additional staff time in the solution of this problem. Some of the issues that have been identified are these:

1. Should the staff attempt to reach agreements as to the precise teaching competencies of student teachers? Such agreements would facilitate the collection of student teaching data for evaluation and would tend to heighten the validity of evaluation. On the other hand, individual professors are jealous of particular emphases in their perception of what a student teacher should do.

2. The University of Utah has invested considerable time and money in training observers to code classroom teaching. A logical consequence of this is to extend the training program of coders and to assume that these individuals will be primarily graduate students. Consequently, major professors could use their time for the analysis and discussion of coded data. Again, many professors feel as if the direct contact with the student teacher is a "must" item to acquire the necessary insight for judgment.

3. There is considerable interest in expanding the videotape library. The staff would like to acquire numerous exemplars of excellent student teaching. The logistics problem is obvious. One of the debated issues is the extent of resources to be invested in this program.

4. Everyone associated with the evaluation of student teaching is aware that certain student teacher qualities are impossible to record. For example, it is quite difficult to acquire precise data on such items as charisma, love, thoughtfulness, and many aspects of higher mental processes. The University is as anxious as anyone for helpful leads in the solution of this problem.

In summary, recording and evaluating the progress of student teachers are largely the consequences of coding devices, audio-visual recordings, and professional judgment.

# Chapter V

# A Study of the Use of Micro-teaching in the Preparation of Elementary Teachers*

## I. PROBLEM

This study attempted to determine the effectiveness of micro-teaching using videotaped lessons as an instructional technique in the preparation of elementary teachers when the simulated teaching situation is tied to ongoing student teaching. Questioning and reinforcement techniques were the teaching skills in focus. The study was limited to twelve students at the University of Utah during a three-month period of student teacher training. The six students assigned to the control group were practice teaching at one school; the other six designated as the experimental group were assigned to another school.

The purpose was to aid the College of Education at the University of Utah in determining the effectiveness of micro-teaching with videotape recorders, upon the acquisition of selected teacher skills during student teaching. Selected teaching skills were analyzed in the context of an elementary school situation.

The effectiveness of using micro-teaching for developing skills in questioning techniques and in using some reinforcement techniques, was chosen as the focus of the present study for several reasons:

1. Teacher preparation at the University of Utah includes training in these skills. In this study, instruction was sequenced to include application of those questioning skills developed in relationship to

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*By Dr. Lillian C. Smith, Associate Professor of Education, University of Utah.

usefulness in teaching elementary school curriculum content in the language arts. Practice was given in methods classes in college as well as in public school classrooms.

2. Information was available from the Far West Laboratory in-service program, from several of the M-STEP projects and from prior experience on the University of Utah campus. Also, a program underway in a student teaching center in Granite School District, near the campus, made the use of essential equipment possible.

3. There is no laboratory school at the University; therefore, there are challenges to develop simulated instructional situations to accommodate demands for specific types of teaching experiences related to the development of particular skills, because of problems in locating and acquiring a desirable variety of "real" situations. Public schools cannot always tolerate the interruptions to their programs which result from the increasing number of student teacher candidates to be trained.

Most studies of the effectiveness of micro-teaching have been limited to and concerned with secondary school or college training. At this time the literature does not include analysis of controlled situations in which videotaping has been paired with traditional acquisition of skills during a pre-service training program in teacher preparation for elementary schools.

Childs[1] suggests that a significant outcome of the use of micro-teaching has been the prerequisite identification and definition of teaching skills, leading to improvement of the caliber of the teacher education program.

The reinforcement techniques selected for this study were limited to the use of verbal or non-verbal reinforcement. Although application of these techniques was patterned after the Stanford models, the present study differed from others reported in the literature by attempting to control certain factors that are known to relate to student teacher performance:

1. The control group was matched with the experimental group on the basis of general ability, pre-professional experience, and general characteristics of the student teaching assignment.

2. Attempts were made to lessen the Hawthorne effect and to reduce the "cosmetic influence" often associated with videotaped situations.

3. Instructional content and supervision were the same for both groups.

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[1] John W. Childs and Associates, "The Uses of Television in Teacher Education," *Audiovisual Instruction,* 12:1050, (December, 1967).

4. The study was limited to a first practice teaching experience required for elementary school teacher certification.

5. The videotaped training experiences were with elementary children regularly enrolled in the classroom.

The student teacher's use of reinforcement techniques was evaluated with him by the supervisor on each visit to the student in his classroom. Student teachers in the experimental group also saw immediately their use of reinforcement techniques.

An attempt was made to take into account some factors that influence learning that have been identified in experiments with programmed learning. One principle of programmed learning is that the most effective, pleasant, permanent learning takes place when the student proceeds with easy-to-take steps[2]. Data eliciting is easily learned, so it provided a comfortable series of first steps leading to more complex questioning skills. Another element of programmed learning is that of active response. The student teachers prepared, taught, then evaluated their progress. There is evidence, too, that a student learns best when he can confirm his answers immediately (feedback). Self-pacing was limited by the sequenced modifications introduced in seminars each week.

Dr. Dwight Allen, co-author of *Micro-Teaching as a Teacher Training Technique*, maintains that the distinction of micro-teaching lies in the opportunity it provides teachers for immediate and individual diagnostic evaluation of teaching performance by colleagues, supervisors, and participating students and for measuring progress in specific teaching techniques.

## II. PROCEDURES

The sample of twelve students in this pilot study (which included no volunteers) were selected and matched from a methods class of thirty-six students. Each had maintained "B or above" grade point averages. They were upper-division undergraduates training in elementary education at a state university. All subjects had completed the same series of prerequisite general education and education courses and were having their first student teaching experience. They were assigned at random to an experimental or a control group (six in each group) at one of two schools in the same socio-economic neighborhood—an urban suburb populated by semi-professionals, professionals, and businessmen. The experimental and control groups were matched in potential and in achievement as judged by (1) admission tests;

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[2] Dwight W. Allen, *et al, Micro-Teaching: A Description,* (Stanford University, 1967), p. 2, Sec. IV.

(2) grades on college course work; and (3) appraisals by teachers of courses completed in the College of Education. The two elementary schools, located in one district, were comparable in pupil enrollment–824 and 820 pupils. The size of the classes in which student teachers were assigned did not vary by more than five students (30-35).

The college course in which the subjects participated dealt with an aspect of language arts appropriate to the grade level in which the student teacher was assigned to teach. The subject used the lesson plan format he had been trained to use in the teacher preparation course work. (See sample of lesson plan format in Appendix B).

Each week throughout the quarter, student teacher subjects in the control and experimental groups were given a specific aspect of questioning or reinforcement on which to focus as a teaching skill. The questioning skills used in the study appraised the student teacher's ability to:

1. Ask questions designed to elicit data from his pupils.

2. Ask probing questions that require more than superficial "first answers".

3. Ask questions that required pupils to make inferences or develop generalizations based on given evidence.

4. Use an inquiry method wherein pupils would ask questions that lead to the solution of a problem.

The subjects were also instructed in the use of selected reinforcement techniques. They attended the same seminars and methods classes and worked with the same instructor. They were involved in the same lectures and demonstrations of teaching behaviors, and were directed by the same university supervisor in their stduent teaching assignments. This "all purpose professor" had participated in a workshop at Stanford and was familiar with the progress of studies of micro-teaching. All twelve subjects received the same instruction on lesson preparation and presentation. All had the same content developed in the methods courses which accompany student teaching. The micro-teaching training utilizing the videotape recorder provided immediate feedback of the student teacher's teaching performance.

A videotape recording was made of each of the twelve student teachers at the beginning of their first quarter of student teaching. Each was instructed to "prepare a good lesson that will demonstrate your teaching skills". This lesson was recorded on videotape. At the termination of their first quarter of student teaching, all twelve student teachers were videotaped again. They were given the same instructions they had received at the beginning session—"prepare a good lesson that will demonstrate your teaching skills." Their performance in using the selected skills and the occurrence of each teaching skill in focus for this study were counted and a tally was marked in the appropriate category of an observation and evaluation scale.

Each of the student teachers prepared and presented lessons for his assigned class of elementary children. Nine of these lessons were observed, responded to, and critiqued by the supervisor. Replanning of the lessons was followed by subsequent instruction by the student teacher in his assigned classroom. In addition, the experimental group, which employed micro-teaching training, presented a short lesson to a selected group of children. This lesson was videotaped, replayed, critiqued by the supervisor and student teacher, then followed by a reteach lesson in the classroom.

The exact difference existing in the treatment of the experimental group and the control group was that only the experimental group had video equipment available in the school where they practice taught, and once each week for the three month period (nine lessons) self-taped a micro-teaching synthetic lesson for eight minutes with immediate visual and auditory playback. The specifically designated target skill lesson, taught away from the classroom with five or six selected pupils was relevant to the on-going program developed in the methods course. After playback the student teacher redesigned the lesson and retaught it in the classroom. Student teachers in the control group could experiment with simulated lessons if they desired, but they were not taped. The availability of equipment in the school was the justification given to the experimental group for their using it.

Therefore, the videotaping of the micro-teaching was an "added" experience for the experimental group which the control group did not have, although all the student teachers in the control group, along with those in the experimental group, were videotaped at the beginning of the student teaching experience and at its termination.

The data collected from this study were from videotapes recorded at the beginning of the student teaching training period and at its termination. The tapes were analyzed at the end of the quarter by four trained observers, and the occurrences of the selected skills were tabulated.

The "before" and "after" videotapes provided the situations to be evaluated by the observers, who had been trained to identify and record the specific instructional behaviors being studied. For this training, videotapes of micro-lessons presented by teachers and student teachers who were not included in the study were used. When the observers were in agreement on the identification of the teaching acts, they scored each student teacher's videotaped lessons. The observers were unaware which were the pre- and post-videotapes.

The instrument used to acquire the data was a teacher-performance evaluation scale developed in the Bureau of Educational Research at the University of Utah and modified to serve the purposes of this study. (See observation scale, Appendix A.)

From these individual tapes the observers tallied a mark in the appropriate place on the observation scale each time the student teacher exhibited one of the skills being studied. The frequency of individual skill behaviors was observed on the initial tape and then compared with the frequency of the same skill behaviors on the final tape. The differences between the two groups' development of the skills being studied during the student teaching period reflected the effect of the micro-teaching experience. Each student teacher was assigned a number so as to remain anonymous to the raters. The observers, therefore, did not know in which group the specific teacher-trainee had been a member.

The hypotheses posed for this study were as follows:

A. There is no significant difference between the experimental group and the control group in the ability of student teachers to ask questions designed to elicit data.

B. There is no significant difference between the experimental group and the control group in the ability of student teachers to ask probing questions.

C. There is no significant difference between the experimental and control groups in the ability of student teachers to ask questions that require pupils to make inferences or generalizations based on past knowledge.

D. There is no significant difference in the ability of the subjects of the experimental and control groups to stimulate pupils to inquire purposefully in the solution of a problem.

E. There is no significant difference between the subjects of the experimental and control groups in the development of the use of verbal reinforcement techniques.

F. There is no significant difference between the experimental group and the control group in the ability of student teachers to use selected non-verbal reinforcement techniques.

## III. ANALYSIS AND DISCUSSION

The data were tabulated from the evaluation sheets. An analysis of variances revealed that none of the F-ratios obtained was great enough to reach the .05 level of confidence. Interpretation of the graphic representation of the findings suggest that further studies should be conducted utilizing a larger sample and providing more time for skill development.

A graphic representation of the findings can be found in Figure I. In performance with each skill the experimental group showed a gain which exceeded that of the control group. The graph also reveals a difference in a teacher trainee's ability to use the separate skills in the beginning of the study. It shows that two of the variables (eliciting data technique, and verbal reinforcement skills) were used with quite high frequency on the pre-test. Four variables (probing, second-level questioning, inquiry questioning techniques, and non-verbal reinforcement skills) appeared to be less readily available in the repertoire of student teachers' skills.

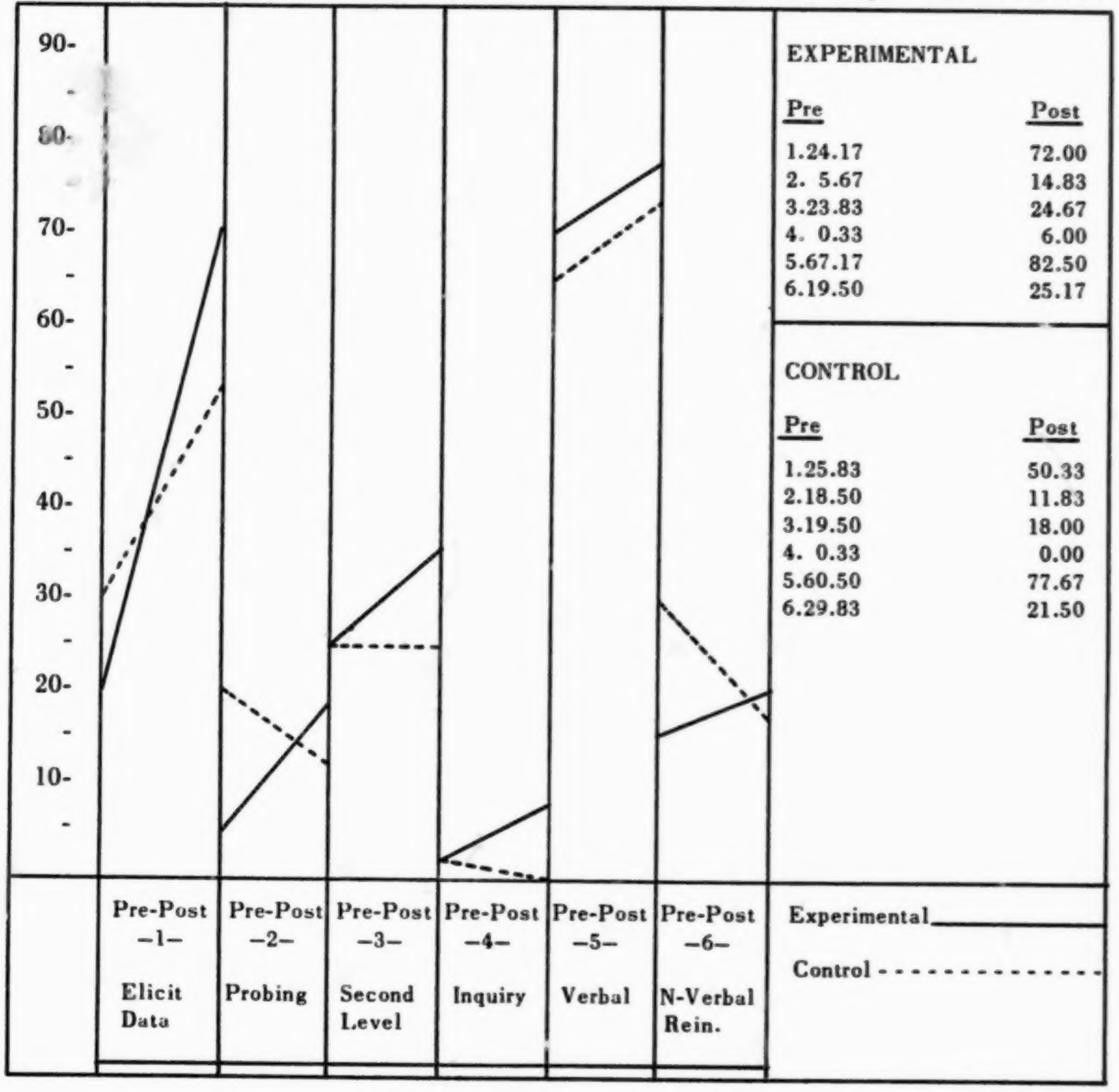
Four of the variables (probing, second-level questioning, inquiry questioning techniques, and non-verbal reinforcement techniques), were used with a lower frequency pre-test score and then showed a less substantial growth than the two with greater pre-test scores. (These two scores were questioning techniques to elicit data, and verbal reinforcement skills.) This would seem to indicate that the four lower-scoring variables were harder to internalize and more difficult to practice. Their greater familiarity with the videotape recording equipment appeared to aid members of the experimental group in attempting to develop the more difficult techniques.

Figure I suggests that seeing oneself in a teaching situation enhances the ability to critically evaluate and constructively modify one's teaching actions. Since the experimental group showed some gains over the control group on five skills, support is lent to the notion that a desired teaching behavior is more easily produced after viewing one's own teaching performance.

The control group, using conventional methods in the classroom, showed no gains; indeed, as measured by frequency, they lost skills in four of the six variables as soon as attention was directed to a different behavior. (These variables were probing, second-level questioning, inquiry questioning techniques, and non-verbal reinforcement skills.)

Analysis of variance was used to test the significance of the differences between the means of the frequencies with which teaching skills were used. The $<.05$ level of significance was accepted as significant for the study. As has been reported these teaching skills were data-gathering questioning techniques, probing questioning techniques, inferential questioning techniques, inquiry technique, verbal reinforcing techniques, and non-verbal reinforcement techniques. An analysis of variance–2 (groups) x 2 (pre-post) x 5 (tests) was first computed. The source table for the analysis of the whole group is found in Table 1. The sources of variables for this design were: group (experimental and control), subjects within groups (Ss/groups), pre-post, and tests. The interactions (x) were: groups x pre-post, pre-post x subjects within groups, groups x tests, tests x subjects within groups, pre-post x tests, pre-post x tests x groups, prepost x tests x subjects within groups. Despite gains being greater for the experimental group, the differences were not large enough to reach the <.05 level of confidence. This finding suggests caution in recommending changed procedures for teacher preparation, based on this study.

FIGURE I
GRAPHIC REPRESENTATION OF THE MEANS OF THE FREQUENCY COUNTS



EXPERIMENTAL

| Pre | Post |
|---|---|
| 1.24.17 | 72.00 |
| 2. 5.67 | 14.83 |
| 3.23.83 | 24.67 |
| 4. 0.33 | 6.00 |
| 5.67.17 | 82.50 |
| 6.19.50 | 25.17 |

CONTROL

| Pre | Post |
|---|---|
| 1.25.83 | 50.33 |
| 2.18.50 | 11.83 |
| 3.19.50 | 18.00 |
| 4. 0.33 | 0.00 |
| 5.60.50 | 77.67 |
| 6.29.83 | 21.50 |

The variance within the tests selected for this study was found to be highly significant. This was expected because the measured behaviors were uncorrelated and were related only in the sense of being teacher behavior skills. The variance in the pre-post condition did not reach the <.05 level. It can be inferred from the frequency distribution (Figure I) that the experimental use of videotaping had an encouraging effect upon the development of the teaching skills although the differences were not statistically significant.

TABLE 1
(ANALYSIS OF VARIANCE) FOR ALL VARIABLES -- TOTAL GROUP

| SOURCE | SS | df | MS | F | P |
|---|---|---|---|---|---|
| Between Ss | (6748.82) | (11) | | | |
| Groups | 102.67 | 1 | 102.67 | | NS |
| Ss/Groups | 6646.15 | 10 | 664.62 | | |
| Within Ss | (115868.50) | (108) | | | |
| Pre-Post | 3276.07 | 1 | 3276.01 | 2.50 | <.10 |
| Groups x Pre-Post | 1086.01 | 1 | 1086.01 | - | NS |
| Pre-Post x Ss/Groups | 13110.70 | 10 | 1311.07 | | |
| Tests | 52079.11 | 4 | 13019.77 | 25.67 | <.01 |
| Groups x Tests | 881.62 | 4 | 220.40 | - | NS |
| Tests x Ss/Groups | 20289.56 | 40 | 507.24 | | |
| Pre-Post x Tests | 6044.39 | 4 | 1511.10 | 3.67 | <.10 |
| Pre-Post x Tests x Groups | 2617.25 | 4 | 652.31 | 1.59 | NS |
| Pre-Post x Tests x Ss Groups | 14683.79 | 40 | 412.09 | | |
| Total | 122617.32 | 119 | | | |

NS – Not Significant

An analysis of variances–2 (Groups) x 2 (Pre-Post) was computed on each of the five teacher behaviors analyzed in this study. The source table for eliciting data questioning techniques is found in Table 2.

TABLE 2
(ANALYSIS OF VARIANCE) FOR ELICITING DATA QUESTIONING TECHNIQUE

| SOURCE | SS | df | MS | F | P |
|---|---|---|---|---|---|
| Between Ss | (11) | 1 | | | |
| Groups | 434 | | 434 | | NS |
| Ss/Groups | 11737 | 10 | 1173 | | |
| Within Ss | (12) | | | | NS |
| Pre-Post | 7211 | 1 | 7211 | 4.079 | ( <.10) |
| Pre-Post x Groups | 1040 | 1 | 1040 | | NS |
| Pre-Post x Ss Groups | 17686 | 10 | 1768 | | |
| Total | 38108 | 23 | | | |

The source table for data on probing questioning technique is found in Table 3.

TABLE 3
(ANALYSIS OF VARIANCE) FOR PROBING QUESTIONING TECHNIQUE

| SOURCE | SS | df | MS | F | P |
|---|---|---|---|---|---|
| Between Ss | 145 | (11) | 145 | | |
| Groups | | 1 | 131.5 | 1.11 | NS |
| Ss/Groups | 1315 | 10 | | | |
| Within Ss | | (12) | | | |
| Pre-Post | 9 | 1 | 9 | | NS |
| Pre-Post x Groups | 376 | 1 | 376 | 4.70 | <.10 |
| Pre-Post x Ss/Groups | 798 | 10 | 77.8 | | |
| Total | 2643 | 23 | | | |

The source table for the second-level questioning technique analysis is found in Table 4.

TABLE 4
(ANALYSIS OF VARIANCE) FOR SECOND-LEVEL QUESTIONING TECHNIQUE

| SOURCE | SS | df | MS | F | P |
|---|---|---|---|---|---|
| Between Ss | | (11) | | | |
| Groups | 181 | 1 | 181 | 1.36 | NS |
| Ss/Groups | 1331 | 10 | 133.1 | | |
| Within Ss | | (12) | | | |
| Pre-Post | 0 | 1 | 0 | | NS |
| Pre-Post x Groups | 9 | 1 | 9 | | NS |
| Pre-Post x Ss Groups | 1209 | 10 | 121 | | |
| Total | 2730 | 23 | | | |

The source table for the analysis of verbal reinforcement technique is found in Table 5.

TABLE 5
(ANALYSIS OF VARIANCE) FOR VERBAL REINFORCEMENT TEACHIQUE

| SOURCE | SS | df | MS | F | P |
|---|---|---|---|---|---|
| Between Ss | | (11) | | | |
| Groups | 84 | 1 | 84 | | NS |
| Ss/Groups | 9405 | 10 | 940.5 | | |
| Within Ss | | (12) | | | |
| Pre-Post | 1998 | 1 | 1998 | 1.78 | NS |
| Pre-Post x Groups | 7 | 1 | 7 | | NS |
| Pre-Post x Ss Groups | 11205 | 10 | 1121 | | |
| Total | 32699 | 23 | | | |

The source table for the analysis of non-verbal reinforcement techniques is found in Table 6.

TABLE 6
(ANALYSIS OF VARIANCE) FOR NON-VERBAL REINFORCEMENT TECHNIQUE

| SOURCE | SS | df | MS | F | P |
|---|---|---|---|---|---|
| Between Ss | | (11) | | | |
| Groups | 66 | 1 | 66 | | NS |
| Ss/Groups | 2190 | 10 | 219 | | |
| Within Ss | | (12) | | | |
| Pre-Post | 10 | 1 | 10 | | NS |
| Pre-Post x Groups | 295 | 1 | 295 | 2.23 | <.10 |
| Pre-Post x Ss Groups | 1319 | 10 | 132 | | |
| Total | 4880 | 23 | | | |

Although the differences between variables examined did not reach the <.05 level, it can be inferred from the magnitude of the F-ratio that videotaping and micro-teaching appear to hold promise for the examination of and further development of modifications in conventional procedures for teacher preparation.

Whereas the control group showed gains in only two variables–elicit-data questioning techniques and verbal reinforcement techniques, the experimental group registered a gain in each of the six variables under study. In the variables where the subjects obtained lower scores–probing, generalizing, and inferential questioning, inquiry questioning techniques, and nonverbal reinforcement–the control group decreased in frequency scores despite discussions, lectures, and demonstrations, classroom exercises and practice designed to develop the skills analyzed in this study. The experimental group, on the other hand, increased in the observed frequency of use on the same four variables, after participating in the same discussions, lectures, demonstrations, and having the same classroom practice, but with micro-teaching training added.

## IV. CONCLUSIONS

It was assumed that the inquiry questioning technique showed a low frequency of use because this method of questioning requires considerable time to set the stage and then get the pupils working on their "seeking" behavior. The necessary time was denied the student teachers in the present study because they knew the taped lesson time would be limited to eight minutes. It also appeared that the student teachers lacked the necessary teaching sophistication to encourage pupils to engage in inquiry-type of questioning under these circumstances. In relaxed classroom settings, student teachers in the experimental group "experimented with " the technique in a number of "unassigned" situations observed by the supervisor. Student teachers in both groups attempted to use the inquiry technique to the same extent on the initial taping. In the final taping the subjects in the experimental group made a small increase in the use of the inquiry method, while the subjects in the control group refrained from its use altogether.

Some kinds of growth not defined as measurable in the study were noted in personal grooming, correct use of grammar, more skill in dealing with others, and "sparkle" in presentations of lessons. For example, no one in the experimental group failed to improve in voice control for instructional purposes.

A statistically significant difference in performance might have been prevented by the following:

1. The careful matching of the students would make it less likely that a difference would occur.

2. The population was small.

3. A common teacher-supervisor related and controlled the methods practice.

4. Micro-teaching was understood by all students in the class as a result of the practice lessons.

5. The practice periods may not have been numerous enough for maximum effect.

6. Evaluation of teaching performance was the same for all.

The obvious differences indicated in the graphic representation (Figure 1) showed that student teachers in the experimental group were influenced somewhat by micro-teaching. There was a stability of skills with videotaped performance. Students who saw themselves continued to use these skills in their teaching experiences, whereas the control group did not. The performance of all skills favored the synthetic situations which were videotaped and played back. Because of administrative pressures due to a limited number of student teaching situations, the findings appear encouraging. It is surprising that the obtained differences all favored the synthetic situation. Despite the deliberate controls which were established to make possible an examination of the influence of videotaping for feedback, certain differences were observed. There is sufficient evidence that synthetic situations of this type could result in reduction of the number of supervisory personnel with an increase in mastery of certain important teaching techniques for the students. There is little value in the acquisition of skills that do not become stabilized in performace. The synthetic situations seemed to favor such stability.

Evaluation of certain aspects of teacher performance could be made on a relatively objective basis by persons who had not visited the classroom, but had been trained to observe the taped behavior.

## APPENDIX A
## OBSERVATION SCALE USED IN THIS STUDY

Student Number

| QUESTIONING TECHNIQUES | REINFORCEMENT TECHNIQUES | |
|---|---|---|
| 1. Elicit data | 5. Positive Verbal | 6. Positive Non-Verbal |
| 2. Proven (beyond first answers) | | |
| 3. Second-level (inferences, generalizations) | | |
| 4. Inquiry (pupils ask questions) | | |
| Comment: Development of the lesson | Comment: Balance to elicit appropriate pupil behavior. | |

## APPENDIX B
## SAMPLE OF LESSON PLAN FORMAT

**OBJECTIVES**

Date ____________________

Subject ____________________

| | |
|---|---|
| **PREPARATION** | **RESOURCES** |

**DEVELOPMENTAL ACTIVITIES**

| | |
|---|---|
| Motivation . . . Getting Started | Focusing attention on content to be developed |
| **Concepts** | **Procedures** |
| **SUMMARY** | **EVALUATION** |

# Chapter VI

# Examples of Selected Video Applications in Teacher Education

TOPICS

Super-Eight Millimeter Cartridge Format for Teaching Episodes
The Use of Micro-teaching Videotapes for Teacher Employment Interview Purposes
Description of a Large-Scale Micro-teaching Program

## SUPER-EIGHT MILLIMETER CARTRIDGE FORMAT FOR TEACHING EPISODES

Clark Webb and Hugh Baird

### *Introduction*

As teacher educators sense more and more strongly the need to provide for their learners appropriate models of desirable teaching behavior, they seek, with proportionately increased motivation, materials which help them to provide such learning experiences.

Videotape and film technology offer exciting (if expensive) ways to meet this growing need. This paper presents the results of a limited investigation into the potential of a super 8mm cartridge film for brief (3-10 minute) model teaching episodes.

A good deal of uncertainty pervades the film technology field. New technical developments are changing the capabilities and potential of film to such an extent that some equipment manufacturers seem to be waiting before they commit themselves to a particular level of product development. Two current areas of uncertainty which one investigating this field must take into account are (1) sound track on film – shall it be optical or magnetic? and, (2) film size – shall it be 8mm or super 8mm? The trend seems to be increasingly toward super 8mm. We have not considered 16mm films in this paper.

With the realization, then, that the information presented in this paper may be out of date by the time the ink dries, there follow data on processes and products.

### *About Formats*

Here is an instructional situation common, probably, to most institutions of teacher education: In a methods class the professor is attempting to help his students, let us say, more effectively frame and use questions. Not satisfied with simply talking about the use of questions, he models for the class appropriate question-asking behavior. Not satisfied with this alone, either, he has the students engage in this behavior themselves. As he observes their problems he wishes he had Teacher X in the room so he could have him present one part of the first-rate lesson using questions effectively which he saw X teach the other day.

It is at this point that our professor will be interested in an instructional aid which will allow his students to observe briefly the target behavior. Four (of several) solutions to the problem of the absence of Teacher X are: (1) videotape a portion of X's lesson, bring the videotape recorder and a monitor into the classroom; (2) film directly with a synchronized sound super 8mm camera and put film in cartridge form; (3) videotape the lesson, have a 16 mm kinescope made and use it in a 16mm projector; and (4) videotape the lesson, have the tape transferred to an 8mm (or super 8mm) sound film and use it in a cartridge projector. The first solution is a method that has been used at a number of institutions for some time. It is, however, becoming more and more difficult to justify tying up $2,000-$3,000 worth of video tape equipment to show a class a five- to ten-minute episode of teaching. The second and third solutions have some limitations. Solution (4) seems to hold promise as a way to make short teaching episodes accessible in the classroom.

Cartridge film projectors allow "packaging" of a filmed presentation from two or three to 30 minutes long on a continuous loop of 8mm or super 8mm film. The film never needs to be threaded or rewound by hand. Both silent and sound models are available, the sound produced on either a magnetic or optical track. The difference between the two methods of sound production, at least as far as the educational consumer is concerned, seems to be the relative permanence of the sound track. A magnetic sound strip, since it is a piece of material bounded to the film, conceivably could become unfastened. Also the magnetic sound may be erased – either intentionally or unintentionally – and a new sound track recorded. Optical sound is part of the film itself and consequently is as permanent as the film.

### *Processes and Equipment*

Solution (4) (above) involves the transfer to film of videotape and the packaging of the film in a cartridge. Typically the processor makes a 16mm kinescope from the videotape (although this step may be by-passed), reduces it optically to 8mm or super 8mm, adds sound, and places the resultant filmed episode in a cartridge. The quality of the film in our experience has been high, even when the original was a one-inch videotape from a protable helical-scan VTR. If the 16mm negative is obtained, additional prints (8mm or 16mm) can be made from it. If a direct process (by-passing the 16mm copy) is used, additional prints are normally not obtainable since standard practice in the industry is not to copy 8mm to 8mm.

The projectors for which film is processed in this manner are of widely varying design and capability. Either rear screen or front screen projection, or both, on some models, is available and as noted earlier, sound or silent models are available.

The other solution proposed to our professor's dilemma was to film a portion of his friend's lesson directly with a sound-on-film super 8mm camera and put the resultant episode in a cartridge. The camera that will do this is a new development which has been marketed only for a few months. The company producing this camera claims that the unit provides lip synchronized sound on super 8mm film. We have used the camera at Brigham Young University and received from the company's processing lab the processed film complete with magnetic sound strip. A malfunction in the camera's automatic exposure meter made it difficult for us to obtain a properly exposed film and, additionally, we may have used the audio tape recorded incorrectly since our sound track had a very high noise level and was almost useless. The claimed lip-synchronization of sight and sound was achieved, it should be noted. A potential drawback to this equipment – from the standpoint of an educational consumer – is the difficulty of making additional copies of the final product. Also there are problems ( not insuperable) in shooting a scene longer than the standard 50 foot roll of super 8mm film (which this camera uses), which runs two and one-half minutes. If one camera is being used, the cartridge roll of film must be extracted from the camera and a new one inserted at the end of each two and one-half minute interval.

### *Summary*

As educators of teachers depend less on their own use of words to provoke learning in their students, they increasingly seek convenient methods of providing the referent of the concept they are teaching. Videotaped or filmed episodes of teaching which model an intended behavior provide one way of doing this. The super 8mm cartridge format appears to provide an accessible, easily manipulated product to assist the teacher educator.

## THE USE OF MICRO-TEACHING VIDEOTAPES FOR TEACHER EMPLOYMENT INTERVIEW PURPOSES

J. Hugh Baird, James R. Baird, S. Robert Infelise

During May 1967, in connection with a Multi-State Teacher Education Project convention held on Brigham Young University campus an experiment was conducted to determine if there could be any value in using micro-teaching videotape demonstrations for teacher employment interview purposes. Six B.Y.U. students currently in secondary teacher training who had previously prepared a seven-minute videotape demonstration on teaching a single concept were used as the subjects for this experiment. Volunteers were selected from among the administrators attending the convention to participate in this experiment to act as employers. They were divided into three groups as follows:

Table I

Group Description

| Group I (6) | Group II (12) | Group III (12) |
|---|---|---|
| Folder Information | Folder Information | |
| Personal Interview | Viewed Videotape Demonstration | Viewed Videotape Demonstration |

Group I consisted of 6 school administrators who were to study the personal folder information for each of the six candidates and then hold a 12-minute personal interview with each of these six student teachers.

Group II consisted of 12 school administrators who were to study the folder information for each candidate and then view a seven-minute videotape teaching session by each student teacher.

Group III consisted of 12 school administrators who were to view the seven-minute videotape demonstration by each of the six candidates without prior access to any information on any student teacher.

The purposes of the experiment were explained to the participants in each group, and each group was told of the other two groups. They were also instructed not to talk or compare notes on their ratings of each candidate.

## PROCEDURE

The administrators in Groups I and II were to study the folder information of each candidate and rate them as superior, good, fair, or poor. Following the rating of all six candidates, they were to then rank them from one to six, one being the most desirable, six being the least desirable.

The administrators in Group I were then to interview each candidate, and the administrators in Groups II and III were to watch a videotape presentation of each candidate teaching a single concept. At the conclusion of each interview or videotape presentation the administrators were to rate each candidate as superior, good, fair, or poor on the following characteristics:

- Appearance
- Voice
- Poise, tact, enthusiasm
- Judgment
- Knowledge of teaching techniques
- Ability to present ideas
- Overall rating

Following the rating of all six candidates from the interview or videotape demonstration, they were then to rank the six candidates from 1 to 6, one again being the most desirable and six being the least desirable.

## ANALYSIS OF DATA

### Ranking Information

*Folder Ranking*

A Correlation of Concordance was computed for the ranking of groups I and II to determine the consistency of the rankings by the judges in each group. Each group ranking was found to be significant at the .01 level, indicating that the rankings within each group were similar.

A Correlation of Concordance was then computed for the folder rankings of both groups combined. It was also significant at the .01 level, indicating that all administrators were consistent in the way they ranked the candidates from the folder information.

*Interview or Videotape Ranking*

A Correlation of Concordance was computed for the rankings given from the interview or videotape demonstration by each of the three groups. The interview ranking for Group I showed a concordance significant at the .05 level. The ranking of Groups II and III who saw the videotape teaching session was significant at the .01 level.

A Correlation of Concordance was computed for all three groups combined yielding a significant level of .01. This indicated that all groups were consistent in the way they ranked the candidate from the interview or videotape demonstration.

As a side question to find the influence years of experience had on the rankings, a Correlation of Concordance was computed for all administrators with more than five years of interview experience and for all administrators with less than three years of interview experience.

There was a correlation of .05 in the way the administrators with more than five years of interview experience ranked the candidates; and a correlation of .01 in the way the administrators with less than three years of experience ranked the candidates.

### Rating Information

*Folder Rating*

An analysis of the way Groups I and II rated the folders has not been made.

*Interview or Videotape Ratings*

To test the relationship of the ratings given by the administrators of the candidates an Analysis of Variance "F" was computed. This was significant at the .01 level in every category except appearance. A Newman Keuls Sequential Range test was computed for each category that was significant to determine the significant difference between the means of each group. The means of each group are presented in Table II.

### *Summary of the Interview and Videotape Rating Information*

In every category the "interview" ratings (Group I) were higher than the videotape ratings (Group II and III) and the "Videotape Only" ratings (Group III) were lower than either group having folder information (Groups I and II).

In the categories of Appearance: Poise, tact, and enthusiasm; Knowledge of teaching techniques; Ability to present ideas, and OVERALL RATING, there was no significant difference between the ratings given by those who interviewed (Group I) and those who viewed the videotape demonstration and had access to the folder information (Group II).

In the categories of Voice and Judgment the difference between the ratings of Group I and Group II was significant at the .01 level. There was no significant difference, however, in the way Group II and Group III rated the candidate in these two categories.

There was a significant difference (.01) in every category except Appearance between the way the administrators who interviewed (Group I) and the administrators who only viewed the videotape (Group III) rated the candidate.

Table II

GROUP MEANS FOR INTERVIEW OR VIDEOTAPE RATINGS

| Category | Means for Group I | Means for Group II | Means for Group III |
|---|---|---|---|
| Appearance | 3.333 | 3.197 | 2.970 |
| Voice | 3.567 | 2.985 | 2.818 |
| Judgement | 3.500 | 2.937 | 2.727 |
| Poise, tact, enthusiasm | 3.400 | 3.273 | 2.833 |
| Knowledge of teaching techniques | 3.300 | 3.136 | 2.742 |
| Ability to present ideas | 3.333 | 3.197 | 2.758 |
| Overall rating | 3.333 | 3.212 | 2.818 |

## CONCLUSIONS

All administrators were consistent in the way they ranked the candidates. The administrators with less than three years experience, however, were more consistent in the way they ranked the candidates than administrators with more than five years experience.

Using a videotape demonstration with the folder information will yield the same general rating as using a personal interview with the folder information. Therefore, a short 7-10 minute videotape presentation with the candidate's personal folder information could be used as a substitute for a personal interview.

Using the videotape demonstration without the folder information does not yield the same rating as a personal interview using the folder information.

## PROBLEMS AND RECOMMENDATIONS

The following suggestions may strengthen future studies:

The influence of sex on the ratings needs to be studied. There was no attempt in this experiment to control the influence of sex on the ratings. Four candidates were male, two female. Five of the administrators in groups two and three were female.

Years of interviewing experience needs to be controlled with judges being matched or equated on this factor. Our administrators ranged all the way from over ten years to less than one year of interviewing experience.

Videotape demonstrations with something comparable to an actual interview need to be tested, possibly a videotape interview to compare with a personal interview or a combination teaching and interview tape with five minutes of teaching and five minutes of interview.

A study using four groups instead of three groups should be done. A control group that had personal interviews without access to folder information to compare with the videotape group that did not have access to the folder information was needed to yield further information.

All of our participants came from the same socioeconomic class. Studies need to be done that vary this to see if middle-class interviewers are looking for the same type as interviewers working in either poverty or upper-class areas.

## DESCRIPTION OF A LARGE-SCALE MICRO-TEACHING PROGRAM

Clark Webb, Hugh Baird, Dwayne Belt, Lyal Holder, Brigham Young University.

The concept of micro-teaching probably qualifies as one of the three or four most provocative developments in teacher education, both preservice and inservice, of the last five years. Everyone, it seems, is either conducting micro-teaching sessions or preparing to initiate them within a short period of time. This paper describes the program of one university which provides at least one micro-teaching experience for every student in the initial teacher education course. In this paper the term "micro-teaching" refers to a scaled down teaching act involving the use of a videotape recorder. It should be noted that micro-teaching may be accomplished and sometimes is, at Brigham Young University, without a videotape recorder.

At Brigham Young University, micro-teaching is defined as the creation of a miniature teaching situation under controlled conditions. All of the elements of the teaching act are present. The uniqueness of micro-teaching results from two factors: (1) the ease with which the teaching situations can be controlled and manipulated and (2) the availability of immediate feedback for the student teacher, provided both through the recording and playback of the instructional sequence using a videotape recorder and through the critical comments of micro-class students and the evaluator.

At Brigham Young University the initial professional sequence course in teacher education is entitled "Basic Concepts of Teaching," a two-semester-hour course taken, typically, by juniors and seniors preparing for either elementary or secondary teaching certification. Elementary and secondary sections of the course are taught separately. Unlike some universities which have a preservice teacher population of 100 students or less, Brigham Young University has in its "Basic Concepts of Teaching" classes alone over 700 students each semester.

In preparation for the fall semester of 1967, the course was restructured and the following behavioral objective included.

Within a period of seven minutes, the preservice teacher will teach a single concept within his major or minor field, and evaluate whether or not it has been learned.

An evaluation of the micro-teaching will be made in terms of the desirability and effectiveness of the materials selected to show the referent, application of the learning sequence, the amount of student involvement, whether or not the concept was learned, whether students were caused to think above the lowest cognitive level, and the voice, poise, and mannerisms of the teacher.

The preservice teacher will write a summary of the suggestions made during the critique sessions for improving his instructional performance. He will list those he selects for implementation and will describe the steps he plans to take to implement them.

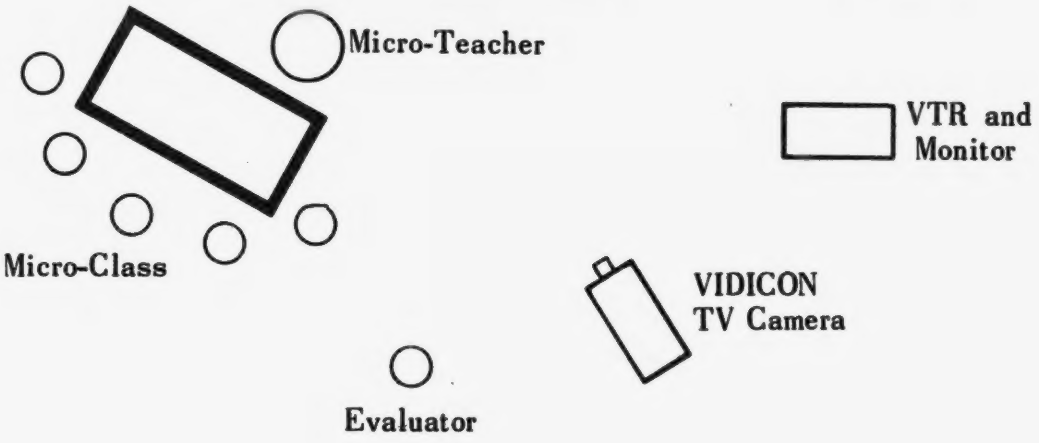
Minimal performance will require that 75 percent of the students taught have achieved the teacher's objective and learned the concept taught, and that students shall be caused to function *at least once above the cognitive level.*

## TYPICAL SESSION

To achieve the objective mentioned above, the Teacher Education 301 student schedules time (30 minutes per micro-teaching session) in the micro-teaching studio. He also arranges for three or four of his classmates to be present to act as the micro-class.

In the studio a physical arrangement is used similar to that illustrated by the diagram given below. This arrangement can be varied depending on the purpose of the session.

TYPICAL EQUIPMENT ARRANGEMENT FOR MICRO-TEACHING LABORATORY



The preservice teacher is prepared to teach a single concept (or psychomotor act) within six to eight minutes. The teaching act is intended to be a self-contained lesson and not simply the first six to eight minutes of a longer lesson. In the studio with the student teacher and the micro-class is the micro-teaching evaluator, who may be the instructor of the micro-teacher's "Basic Concepts of Teaching" class, another faculty member from the Teacher Education Department, or a trained graduate assistant. The evaluator also acts as the equipment operator.

As the micro-teacher presents his lesson, his performance is recorded on videotape. The evaluator observes critically the trainee's teaching effort and notes suggestions for improvement and commendations on an evaluation form.[1] At the conclusion of the lesson, the videotape is rewound and the members of the micro-class are given the same teaching evaluation form used by the evaluator. To begin the evaluation, the instructor-evaluator and the students discuss the student's performance in a general and usually positive way. The evaluator may make suggestions about what to look for during the videotape playback. As the videotape is replayed, the micro-teacher, micro-class members, and evaulator review the teaching act and comment freely. If desired, a particular segment may be replayed, and also a "stop action" process may be used.

Recommendations for improvement are often made first by the trainee himself. Due to scheduling problems occasioned by the large number of students currently using the equipment, it is rare that a student is asked (or allowed) to reteach a lesson at the time. Some micro-teaching applications are able to accommodate reteaching.

It is appropriate to note here an objection which is sometimes voiced by educators who have heard of micro-teaching but who have not had experience with the method: "Doesn't the micro-teaching situation with its cameras, operators, on-looking peers, and impact of the playback generate psychological pressures which result in (l) an atypical teaching performance and (2) some form of defensive reaction to the anxiety produced?"

After two years and some 1,500 micro-teaching sessions, our answer would be "no" on both counts, with qualifications. The initial session may occasionally represent teaching behavior distorted somewhat by the micro-teacher's anxiety. Sometimes it is evident that the instructor needs to emphasize positive characteristics during the playback session to offset somewhat the student teacher's negative perception of his performance. The anxiety produced by the camera is quite similar to that produced during the first few days of teaching by an actual classroom full of students, with the difference that it occurs without risk to thirty students.

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[1] The Brigham Young University Concept Teaching Evaluation Form is being tested and revised on a continuing basis. Copies may be obtained by writing to the authors, c/o Teacher Education Department, Brigham Young University, Provo, Utah 84601.

Typically, however, these problems are of such a minor importance that we can effectively discount them.

## EQUIPMENT, FACILITIES, AND LOGISTICS

At Brigham Young University two one-inch Sony model EV-200 videotape recorders and one half-inch Concord model 600 are presently being used. Sylvania SC-12A cameras with zoom lenses and with top-mounted Sony five-inch monitors are used. A twenty-three inch monitor on a movable cart allows a class of up to thirty-five or forty to view comfortably. Audio can be a headache, even when the micro-class is composed of only four or five persons. Generally, an audio mixer which allows feeding of a lavaliere microphone (teacher) and one or two stand microphones (class) into the videotape recorder is used. A single stand microphone placed between the teacher and the students has been used with limited success.

University policy requires that the Broadcast Services Department purchase all videotape equipment used by the university. Departments making extensive use of the equipment receive it on long term loan from Broadcast Services. Maintenance is done by Broadcast Services personnel.

In addition to the education building on campus in which one set of equipment is housed, a section of a home owned by the university has been converted into a micro-teaching studio. Here the other Sony set and Concord equipment are employed.

Providing some 730 micro-teaching sessions during a semester adds approximately 365 hours to an already heavy work load, allowing 30 minutes of time per session. The logistical problems involved become apparent when one considers that, due to the necessity of providing preliminary and prerequisite experiences, the more than 700 micro-teaching sessions are scheduled only during the last ten weeks of the semester. The fall 1967 semester found the studio equipment in operation fourteen hours a day (7 a.m. to 9 or 9:30 p.m.) Monday through Friday and an additional five hours on Saturday mornings. Due to the extensive use of the education building for other university classes, the equipment housed there was used an average of three to five hours per weekday and five hours on Saturday.

As noted earlier, the evaluation of micro-teaching sessions was handled by faculty members and graduate assistants, the latter trained especially for this work. Inasmuch as regular class time was not used for micro-teaching with the videotape recorder, it was impossible for the students to schedule their micro-teaching only at times when their particular instructor was available to act as evaluator. For this reason three graduates served as assistants.

## EVALUATION OF EFFECTIVENESS OF PROGRAM

Student reaction to the micro-teaching experience has been both decided and positive. A random sample (N=85) of the 730 students who micro-taught during the fall semester of 1967 indicates that almost nine out of ten of those who micro-taught at least once believed such experience indicated areas where they could make improvement (Table 1.) Seventy five per cent of those in the sample said that it was "very true" or "somewhat true" that micro-teaching "changed my self-image as a teacher." Other conclusions drawn by the students can be seen by referring to the Table.

Table 1
EVALUATION OF MICRO-TEACHING EXPERIENCE
BY TEACHER EDUCATION 301 STUDENTS
N = 85

| STATEMENT | VERY TRUE | SOMEWHAT TRUE | SOMEWHAT UNTRUE | NOT TRUE |
|---|---|---|---|---|
| Micro-teaching (including video taping) as a technique to evaluate my teaching: | | | | |
| 1. Changed my self-image as a teacher | 35% | 41% | 20% | 4% |
| 2. Indicated to me areas where I can make improvement | 88 | 9 | 3 | 0 |
| 3. Is not much more than just a novel experience | 6 | 4 | 11 | 80 |
| 4. Could be easily replaced by other, more ordinary, experiences | 6 | 7 | 10 | 78 |
| 5. Is embarrassing and discomforting | 4 | 23 | 32 | 41 |
| 6. I would like more opportunities to be taped | 58 | 24 | 6 | 12 |

Evaluating the learning activities provided in Teacher Education 301, 87 per cent of a random sample of students from three sections (N=41) rated micro-teaching as "excellent." No other learning activity provided during the course was rated "excellent" by more than 37 per cent of the students (See Table 2). Additional information has been gleaned from those who evaluated the students. Their perception of the worth of micro-teaching learning activity is seen in Table 3.

### Table 2
### PERCENTAGE OF TEACHER EDUCATION 301 STUDENTS RATING SELECTED LEARNING ACTIVITIES AS "EXCELLENT"
N = 41

| LEARNING ACTIVITY | % OF STUDENTS RATING THE ACTIVITY AS "EXCELLENT" |
|---|---|
| 1. Micro-teaching with VTR | 87 |
| 2. Writing behavorial objectives | 37 |
| 3. Use of referent | 37 |
| 4. Writing lesson plans | 32 |
| 5. Working in team groups | 27 |
| 6. Inquiry teaching | 17 |
| 7. Class lecture-discussion | 15 |
| 8. Inductive/deductive teaching | 12 |

### Table 3
### EVALUATORS' PERCEPTIONS OF MICRO-TEACHING WITH TEACHER EDUCATION 301 STUDENTS
N = 7*

| | VERY TRUE | SOMEWHAT TRUE | SOMEWHAT UNTRUE | NOT TRUE |
|---|---|---|---|---|
| 1. I perceived the students who micro-taught as having positive feelings toward this experience. | 6** | 1 | | |
| 2. One micro-teaching experience seems to be sufficient for our purposes. | | | 4 | 3 |
| 3. The time, effort and expense necessary to provide each Teacher Ed. 301 student with one micro-teaching experience is justified. | 6 | 1 | | |
| 4. The degree of similarity between the micro-teaching experience and the real public school classroom is high. | 2 | 5 | | |

* These seven evaluated more than 98 per cent of the 730 sessions conducted.

** Actual number of responses, not percentages.

## CONCLUSION

The highly favorable experimental evidence generated at Stanford University and other institutions where micro-teaching has been used is substantiated by the Brigham Young University results in providing the experience to large numbers of beginning elementary and secondary education majors. The concern at Brigham Young University is with the question, "How can we increase the micro-teaching experiences for preservice teachers?" not with the already-answered question, "Does it help?"

James Russell, former chairman of the Educational Policies Commission of the National Education Association, recently wrote:

> Pre-service education of teachers offers little hope (of providing innovative teachers) because the student is not engaged in actual practice of his profession and hence is usually unable to understand the changes of self-image which are implicit in the things he may be learning. In other words, his learning is verbal only, unrelated to practice.[2]

At Brigham Young University micro-teaching is seen to be a beginning solution to the dilemma posed by Dr. Russell.

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[2] James E. Russell, *Change and Challenge in American Education* (Boston: Houghton, Mifflin Co., 1965), pp. 94-95.

# Chapter VII

## Interstate Commerce in Ideas A Story of Cooperation in Teacher Education*

Why did seven states join forces for the improvement of teacher education? Why didn't each state pursue that goal individually? Why is interstate cooperation so important?

The M-STEP concept is based on the thesis that many minds are better than one. The seven states formed a compact because they felt they could improve their teacher education programs more rapidly and effectively in concert than by working individually. And they agreed that effective cooperation depends on a constant, across-state-lines sharing of methods, innovations, and solutions——an interstate commerce of ideas.

The compact states realized that little sharing of ideas takes place in the ordinary course of events. One leader noted: "I spent most of my career as an educator in a single state. During those years I had little idea of what teacher educators were doing in the surrounding states." Unfortunately, his experience is not unique. If teacher education practices in this country are to improve, to adapt to change and to initiate change, the dissemination of new ideas cannot be left to chance. State educational systems need not operate in complete isolation from each other.

The need for cooperative activities and organized channels of communication was expressed as follows in the original application for the M-STEP grant:

> Among the fifty states there is limited opportunity for intercommunication concerning common problems affecting teacher education. There is still less opportunity for professionals from the various state departments of education to meet in groups

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*Prepared by Central Staff, based in part on materials collected by Charles K. Franzén.

> and to creatively develop plans for more effective state coordination and improvement. Thus, opportunities for mutual stimulation and helpfulness are totally inadequate. In effect, state boundaries tend to serve as barriers to the transmission of professional insights and practices.[1]

The concept of several states working jointly to improve teacher education was highly exciting to original planners of the project and the Planning Board. A very early statement shows full commitment to the cooperative idea:

> The multistate nature of the proposed project, itself an innovation, will facilitate the development of techniques to accelerate the diffusion of innovative practices across state boundaries. In a genuine sense, and in an organized way, states involved in the Compact will teach each other in the processes of development along fronts which are believed to be significant to the states and to the nation. In this way, patterns of organized cooperation and collaboration, which long have been functional in other aspects of American enterprise, but have been relatively ineffective in educational circles, will become operative on an interstate basis.[2]

Requirements of Title V, Section 505, of Public Law 89-10, the Elementary and Secondary Education Act of 1965 assign a high priority to interstate cooperation in the organization of projects funded by Section 505 of the Act.

## INTERSTATE COOPERATION: A PROCESS

During the period of project operation teacher educators from different parts of the country were able to work with each other, discuss mutual problems, and share new approaches. Many teacher educator professionals participated in these experiences. These activities proved so popular and so productive that it is not likely they will end with the termination of the project.

To stimulate interstate cooperation and to develop and maintain a climate in which a cooperative spirit would germinate and grow, the M-STEP planners employed several techniques. Interstate conferences and visitation were probably the most effective methods to stimulate cooperation. In the process of conducting these conferences, and by providing funds that enabled educators from the seven states (widely separated geographically) to travel to such meetings, the project made possible face-to-face encounters and idea pooling never before experienced by many of the participants. In addition to such meetings, cooperation was generated by consultants serving as liaison agents among the states and by the dissemination of information via printed materials, films, and videotapes.

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[1] *Teacher Education in Transition* , Volume I: *An Experiment in Change* (Baltimore: Multi-State Teacher Education Project, 1969), Appendix.

[2] *Ibid*.

### *The Planning and Coordinating Board: Agency of Cooperation*

The first cooperative contact among the seven project states was the meeting of their respective state directors of teacher education and certification. The seven state directors became the M-STEP Coordinating Board. As a representative of the state education agency each was also responsible for project activities in his state. As T. H. Bell, State Superintendent of Public Instruction in Utah, put it: "The multi-state nature of the project is an innovation. M-STEP is not seven different state projects but one project in which seven states are participating . . . . It is believed that by pooling resources and cooperating in projects such as this, state departments of education will increase in effectiveness as they broaden their services and extend their leadership." [3]

Cooperation at the planning level developed inevitably as the Board members discussed with the Project administration and Office of Education representatives their proposed state programs, goals and philosophy. The Board met periodically throughout the life of the project.

## STATES COOPERATE TO IMPROVE LABORATORY EXPERIENCES

The M-STEP states soon realized that each one had unique programs, experiences, problems, and points of view that could be helpful to the other states. Immediately they began drawing on each other's resources.* They used three basic idea-sharing techniques: conferences, consultants, and publications.

It is not possible to list all activities of the seven states though several examples will be illustrative.

### *Conferences*

*West Virginia's Think Session on Student Teaching Centers.* When the

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[3] *The Use of Video Processes in Teacher Education*, M-STEP Monograph No. 1 (Salt Lake City: The Utah State Board of Education, in cooperation with the Multi-State Teacher Education Project, 1967), Foreword.

*The first project-sponsored meeting drawing upon advice of professional staff from other states was held by South Carolina in June, 1966. The second meeting of this nature was held by Utah in July of the same year.

West Virginia M-STEP staff became involved in planning a pilot center for student teaching, it called in professionals from other states with experience in planning or administering centers. Individuals from Maryland, Michigan, Washington, and the Central Office assembled in West Virginia for an intensive session with the West Virginia staff. Their goal was to review and evaluate plans for the West Virginia Pilot Center. From this session came the following considerations.

- College professors, supervisors, principals, and teachers should take part in planning a student teaching center.
- Planners should make sure that the center provides more effective learning experiences for teachers than would be possible without a center. Having a center is not, in itself, a guarantee of better teacher education.
- Center participants must be enthusiastic and willing to invest much of their professional time.
- A preliminary document should state in precise terms what improvements in laboratory experiences the center will endeavor to make. The statement should be discussed thoroughly by the center's advisory committee and all participants in the center. After they agree on what needs to be done, they can decide on how it can be done.
- The project design should provide for a description of steps to be taken to organize the center, a description of the nature of the student teaching experience, feedback from participants, and description of ways of evaluating the center.
- The state coordinator must outline for himself what needs to be done in preparing for the opening of the center: (a) tasks to be done; (b) who must be contacted; (c) meetings of sub-committees; (d) documents prepared; (e) how students will be handled; (f) information on students; and (g) assignment of all these tasks and setting of target dates.

*Michigan's Teacher Education Clinic.* When Michigan planned its State Clinic on Student Teaching for Michigan educators, the Department of Education invited representatives from other project states. In line with M-STEP policy state leaders felt that these out-of-state visitors would benefit from learning about Michigan's experiments in student teaching, and that Michigan participants would gain new ideas and insights from the presence of out-of-state teacher educators.

The Clinic provided all participants with opportunities to visit student teaching programs in local schools and institutions. Visitors were thus able to see a variety of experimental programs in operation. They were able to discuss with Michigan teacher educators various aspects of new student teaching programs and exchanged information about their own programs and activities.

"The cooperative approach to teacher education programs is the primary concern of Michigan M-STEP," according to one participant. "Utilizing the resources of the other project states, we feel M-STEP in Michigan can become a real agent for bringing about change in preparing teachers."

*Florida's Group Discussions.* Out-of-state participants in Florida's March 1967 conference[4] had an excellent opportunity to meet and mix with local educators. The conference began in Tallahassee with participants from other M-STEP states making presentations of their teacher education innovations and experiments. Following these presentations, the participants met in small groups to discuss the question, "Can M-STEP ideas be adapted to Florida's needs?" Thus, the thinking of state personnel from various geographic areas and with many kinds of experiences was directed toward Florida's unique problems and needs.

Following are some of the ideas developed by Florida groups. Many have implications for the improvement of laboratory experiences:

- The internship program and the developing certification guidelines in Washington State bear investigation for Florida.
- Because Florida must recruit a large number of teachers from outside the state, the development of any program must provide for inservice as well as preservice training.
- Local school districts must assume a greater responsibility in the total program of teacher training, but the supervision of interns must remain with the colleges. The role of the local school districts and the colleges must be reexamined and perhaps redefined.
- Types of teaching performance must be classified, and techniques for appraising those types must be developed.

The groups asked questions seeking more detailed information about programs in other states. Participants in this interstate meeting also worked together on problems of school-college cooperation they had encountered as they developed laboratory experiences.

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[4] A complete report of this conference appears in the publication *Ideas from M-STEP* (Tallahassee, Florida: State Department of Education, June 1967).

## STATES COOPERATE TO IMPROVE VIDEO PROCESSES

Each M-STEP state selected a special area of teacher education on which to concentrate its efforts. Following are some examples of how states which concentrated on video processes used assistance from other states, employing the same basic methods cited in the preceding section on laboratory experiences.

### *Conferences*

*Interstate Meeting Developed Topics for Video Production.* When South Carolina M-STEP, in the early planning stages of the project, decided to concentrate on the production of video materials for teacher education, the State Director believed the ultimate users of those materials should be involved in their planning. To this end, South Carolina held an interstate video conference on June 8 and 9, 1966. Representatives from all project states were invited.

During this meeting visiting representatives from the other states assisted in developing a list of what they considered worthwhile topics for South Carolina's video productions. They also made general suggestions on the use of video processes in teacher education.

- The following considerations evolved from this meeting:
- Classroom episodes should be taped. Representatives of the seven M-STEP states could seek the advice of local educators as to what kinds of episodes would be most useful.
- A professional staff should choose the valid tapes and make them available to all professionals wishing to use them.
- Committees should be selected to study resources in other states.
- M-STEP should build a library of tapes and films.

The conference participants also focused on how South Carolina could help other M-STEP states. The following suggestions were made:

- West Virginia could use South Carolina videotapes in its Pilot Center for Student Teaching.
- Utah could use videotapes to inform educators of the potential of video processes in teacher education.

- South Carolina could provide the other states with the cooperative procedures used in developing and presenting videotapes.

- The South Carolina M-STEP tapes could be made available to M-STEP and to the nation.

"The South Carolina project has gained much from interstate counsel concerning the production of worthwhile videotapes," said George Hopkins, Director, South Carolina Office of Teacher Education and Certification.

*Video Processes Used To Conduct Conference.* The Utah M-STEP staff decided that a good way to demonstrate the value of video processes to Utah educators and to personnel from other project states was to use the video process as a conference technique. Utah's July 1966 conference was titled, "Improving Professional Laboratory Experiences in Teacher Education with Emphasis on the Use of New Media." Its purpose: to illustrate the present and future possibilities of new and established media to educators in Utah.

Participants discussed the Utah project in light of video presentations of the following topics: student teaching centers developed by the University of Utah; internships at Brigham Young University; and a kinescope discussion of the use of audiovisual media by L. O. Andrews and R. F. Cyphert of The Ohio State University. A teleconference was also held between Edgar Dale of Ohio State and R. F. Cyphert, with conference members participating in a two-way discussion.

Portions of the conference program showed activities—via videotape and kinescope—in other states: a videotape of a classroom situation in a Massachusetts laboratory school; a videotape of South Carolina student teachers discussing lesson planning; a videotape from South Carolina on reading instructions.

*Conference Held To Evaluate State Program.* All project states sent representatives to Utah's second interstate conference (May 18-19, 1967) to learn of Utah's activities in videotape production and use during the preceding year. Delegates worked with educators from Utah colleges and schools to evaluate the state's M-STEP activities.

The first day of the conference was devoted to reports of other M-STEP state projects, a review of the films and videotapes produced by Utah, and a final discussion in which the following questions were treated: (1) In what ways have teacher education programs in Utah been influenced by M-STEP? (2) What additional impact do you foresee? (3) What kinds of materials are most valuable in teacher education programs (structured or unstructured videotaped observations, simulated situations, single-concept tapes or film loops, etc.)? (4) What additional activities within the scope of M-STEP could contribute to the improvement of teacher education in either preservice or inservice situations (micro-teaching, team teaching, structured or unstructured observations, etc.)?

Below are some of the group's responses to the questions that related to video processes:

M-STEP has influenced teacher education programs in Utah by encouraging the use of videotapes and other media. It has provided opportunities for college staffs to learn to use videotape recordings and other media in teacher education and has made available tapes, films, and other materials for the extension of laboratory experiences. M-STEP has provided earlier orientation of prospective teachers through videotape.

What about the project's future impact on teacher education as a result of its work with video processes? The group said it foresees a more innovative and creative use of the television medium . . .an improvement of the teacher's self-image through the use of such media . . . the development of a more analytical, diagnostic approach to student teaching . . . and a wider use of technology in teacher education programs.

The participants also suggested further video activities within the scope of M-STEP which would improve teacher education. Those activities included making available on videotape additional models of various teaching behaviors or performances for an analysis and comparison; preparing single-concept tapes or films; designing workshops on the new media for college supervisors and cooperating teachers.

*Uses of Television Discussed in West Virginia Conference.* During an interstate meeting on "New Patterns and Processes" in laboratory experiences, held in Charleston, West Virginia, October 25-27, 1967, special emphasis was placed on the uses of television in the various project states. After representatives from the seven states had reported on the television aspects of their laboratory programs, a panel of West Virginia educators reacted to the conference in general and to its implications for teacher education in their state.

## USE OF CONSULTANTS

Maryland was a leader in using consultative services for its Kemp Mill Center. Consultants from five non-M-STEP states advised the Center on the supervision of student teaching, the teacher as a change agent, appraisal of student teaching, interaction analysis, and simulation.

Consultants from Washington and Maryland discussed their programs with educators in a series of four regional meetings throughout the state of Florida.

The South Carolina project employed an expert from Duke University to discuss interaction analysis with state educators.

The West Virginia project discussed with Michigan educators the various aspects of organizing a center for student teachers.

The M-STEP Central Office staff visited all seven states and responded to requests for professional service on a wide variety of problems ranging from laboratory experiences to planning conferences to writing assistance in the production of videotapes and films.

Consultants from both project states and non-project states have crossed state boundaries to advise on the development and use of videotapes and films in the preparation of teachers. For example: L. O. Andrews of The Ohio State University served as consultant for South Carolina's videotape and film project. Hugh Baird of Brigham Young University visited South Carolina to discuss techniques of micro-teaching. Baird and Earl Harmer of the University of Utah dealt with micro-teaching in a meeting sponsored by Florida M-STEP. The M-STEP Central Office has also provided consultative services.

"In the development of videotapes and the handbook, we have valued greatly the counsel, advice and resources of other M-STEP partners," says Boyd Israel of South Carolina.

Fred Daniel, now Associate in Teacher Education, State Department of Education of Florida, says, "The project has served as a vehicle by which outside resource persons have served Florida educators. Micro-teaching . . .was one example."

## PUBLICATIONS AND VIDEOTAPES

*Printed and Visual Materials Spread the Word Across State Lines.* The project's information about activities to improve teacher education was transmitted across state boundaries via monographs, handbooks, newsletters, and bibliographies of materials. Florida M-STEP published monographs, brochures, and duplicated materials. Maryland produced a newsletter. Michigan distributed duplicated materials and manuscripts.

South Carolina and Utah each produced a series of videotapes designed to improve laboratory experiences and publicized them in the other M-STEP states through brochures and descriptive lists.

Distribution of materials throughout the country provided a channel through which project staffs transmitted the video idea to educators in other states.

Listings and descriptions of teacher education films and tapes have been distributed by South Carolina and Utah. Videotapes produced by these states have been made available to all states for use in their teacher education programs.

A monograph providing practical information on the use of videotape recorders for teacher education was produced by Utah M-STEP for the use of Utah educators, those in other project states, and teacher educators throughout the nation. It describes some model videotapes produced by Utah; discusses the use of video processes in micro-teaching; and explains the operation of equipment, lighting conditions, how to edit tapes, and other specifics.

A publication[5] produced by the M-STEP Central Office was sent to more than 2,300 individuals in 50 states and 6 foreign countries. A complete list of M-STEP materials appears in the Central Office publication *Selected Materials from M-STEP.*[6]

"Interstate cooperation in this project has been invaluable," states Vere McHenry, from Utah. "Ideas and suggestions have resulted in the production and development of materials that have widespread use and appeal rather than being of limited or localized value. The M-STEP has helped break down the provincialism that so often exists in teacher education programs. Sometimes institutions get the impression that they are producing teachers only for the local market . . . ."

## OTHER COOPERATIVE ACTIVITIES

### *Correspondence Between the States*

Staffs in each of the compact states and in the Central Office have corresponded about project activities with educators throughout the nation and in foreign countries.

The Florida staff maintained continuous contact, through memoranda, with the staffs of the other six M-STEP states and the Central Office, keeping them informed about activities in the Florida project. Evaluation of these activities was solicited and given.

All of the M-STEP states received requests for information about their activities from other states, as well as from individual colleges and schools. Requests for project publications have come to the Central Office from all 50 states.

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[5] Howard E. Bosley and Harold E. Wigren, (Eds.) *Television and Related Media in Teacher Education, Some Exemplary Practices* (Baltimore: Multi-State Teacher Education Project, August 1967). 53 pp.

[6] *Selected Materials from M-STEP* (Baltimore: Multi-State Teacher Education Project, October 1968). 27 pp.

### *Project Personnel Address Meetings of Other Organizations*

In order to disseminate information about M-STEP activities to a wider audience in other states, M-STEP staff members have addressed many regional and interstate gatherings. For example, M-STEP personnel described project programs at four meetings of the National Association of State Directors of Teacher Education and Certification; at a meeting of the Southeastern Regional Conference on Educational Technology at Richmond in 1966; at the Southern Education Foundation meeting in 1967; at a regional meeting of the National Commission on Teacher Education and Professional Standards in 1968; at the joint conference of the Association for Student Teaching and the American Association of Colleges for Teacher Education in 1968; at the conference of the National Association of State Boards of Education at Phoenix in 1968; and at the national conference of the Division of Audiovisual Instruction of the NEA at Houston in 1968.

## WHAT HAS INTERSTATE COOPERATION ACCOMPLISHED?

Has the effort invested in interstate cooperation proved fruitful? Do the M-STEP participants feel that cooperative endeavor has helped teacher education in their states—or could they have progressed as rapidly individually?

The situation described below in a 1965 proposal to the U.S. Office of Education has been changed considerably by M-STEP:

> Among the fifty states there is limited opportunity for inter-communication concerning common problems affecting teacher education. There is still less opportunity for professionals from the various state departments of education to meet in groups and to develop creatively plans for more effective state coordination and improvement. Thus opportunities for mutual stimulation and helpfulness are totally inadequate. In effect, state boundaries tend to serve as barriers to the transmission of professional insights and practices.[7]

It should also be noted that the expectations expressed in the following statement prepared in January 1966 by the pro tem director of the M-STEP planning project have been realized:

> The Compact expects to instigate means and media for use in the dissemination of information concerning the processes and

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[7] *Teacher Education in Transition*, Volume 1: *An Experiment in Change* (Baltimore: Multi-State Teacher Education Project, 1969), Appendix.

> outcomes of state and interstate projects. Examples of these means and media are newletters, interstate observations and visitations by representatives of teacher education programs and other groups, the distribution of state bulletins describing each state's progress of compact projects, films showing project development, and carefully planned conferences.[8]

No organized evaluation has been made of the effects of the cooperative activities described in this chapter, and it is even questionable that such an evaluation, if carried out, could produce concrete, objective data. Statements made by M-STEP participants testify to the value of interstate cooperation; but the real merits of cooperation will be evidenced in the years ahead if teacher education is to carry on the innovative trends initiated by M-STEP.

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[8] "A Preliminary Overview, Multi-State Teacher Education Project" (Baltimore: Maryland State Department of Education, January 1966).

# PART II

# TOWARD NEW HORIZONS

# Chapter VIII

# Challenges and Needed Developments in Teacher Education*

Teacher education has come under severe attack from many quarters in recent years. For a long time teacher educators of experience, when pushed to make an honest confidential analysis, have had to admit that programs for the preparation of teachers have not generally been very effective. But during the 1960's fast paced changes in the teaching profession have sharply accentuated some of those limitations and, at the same time, have pushed new demands upon the whole process of teacher education—preservice as well as inservice.

Three of these limitations will serve to illustrate growing areas of pressures and needs. Newly certificated teachers frequently find themselves unable to meet the challenging tasks and demands to which they are asked to respond in all types of present-day school communities. Special problems of providing adequate education for the urban and rural poor, for minority groups, and for the various classifications of atypical children have tended to focus on a need for some specialized preparation for teachers—specialization beyond traditional subject matter and grade level areas. Moreover, the whole fabric of school organization has been shaken by the demands of militant teacher groups for full professional status and thus for authority to make those decisions which professionals are accustomed to make about their roles and duties. By contrast, the teacher has generally been low man on the totem pole, with administrators, supervisors, and specialists directing their activities and evaluating their service.

To put it very bluntly, teacher education is at the crossroads. On the one hand, able, dedicated persons—in fact thousands of them—have labored diligently to improve their efforts and the effectiveness of their curricula and instruction. With no discredit to these persons, this effort has not been adequate for the task in the recent past and will be totally inadequate for the demands of the next decade or two. Persistent problems have been recognized by many, but effective solutions have not been discovered for a variety of reasons, some of which will be reviewed briefly. The net result is that members of the teaching profession must face up to the crucial fact that all previous efforts have not placed demonstrably competent teachers in every classroom, professional teachers whose work can be recognized by all–administrators, boards of education, parents and colleagues–as superior to that of virtually all nonprofessionally prepared persons. This is in sharp contrast to the condition which exists in most other professions, to whose membership the public often accords much higher status and remuneration.

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*By L. O. Andrews, The Ohio State University, Columbus.

## LIMITATIONS OF TEACHER EDUCATION TODAY

No comprehensive *theoretical base* exists for teacher education in general, or for the laboratory phases of teacher preparation, as an example of one of the most severely limited areas from this standpoint.

Unfortunately, the demands for new teachers are so great that some kind of teacher education must go on continuously; therefore, it is impossible to wait for the research and the scholarship necessary to develop a competent theoretical base. Frequently it is recognized that the profession knows much more about how to educate teachers than is actually practiced. This fact reinforces the idea that the best minds should develop the best possible *rationale* for teacher education from the knowledge and experience already available. Recent financing of several institutions to develop model programs is a step in this direction; but there is still a danger that these projections will be such elaborate models that most institutions will not be able to implement them. This concern supports the proposition that a comprehensive rationale is indeed needed as a guide rather than just as a model.

Both a theoretical base and a comprehensive rationale for a professional curriculum are most likely to result from the work of lifetime scholars in the broad field in question. Unfortunately, the number of such scholars in the field of teacher education, *per se,* has been only a mere handful. The profession of teaching has been very slow to recognize the need for outstanding *scholarship* in the total curriculum of teacher education. Again, some effort has gone into remedying this gap during recent years, but comprehensive scholarship is hardly acquired instantly in the fashion in which so many want–yes, even demand–instant professional status, instant prestige, instant salary adjustments. True scholarship in teacher education will require broad understanding of the related behavioral sciences, of research in all phases of education, of the needs of society, and of the changing demands upon the practitioner of teaching. The task then becomes one of synthesizing all this, working along with those who design and operate teacher education curricula, both preservice and inservice.

Faculties of teacher education institutions long ago learned through bitter experience that they must be realists—that is, they must trim their programs and activities to the *financial resources* available. Genuine improvement becomes very slow when faculty members can honestly and glibly say, "We would like to do such and such, but there isn't any money in the budget for that." In the next few years, the outlook for any vast expansion in the proportion of higher education budgets allocated to teacher education does not appear very bright. Improvements may come much more quickly and frequently from a drastic redeployment of financial resources than from any massive infusion of new money into this field.

Perhaps the single most significant factor in the lack of sufficient resources for teacher education is the historically devastating pattern of a *brief average term of service of certificated teachers.* The number of newly prepared degree-holding certificated teachers produced annually is now moving up toward a quarter million. But a significant percentage, sometimes as much as 20 to 30%, do not begin teaching upon graduation; over a third of the total are out of teaching by the end of their third year, and over one half by the end of the fifth year. The net result is that the average length of service in teaching is still around 9 to 11 years in most states, which is a sharp contrast to the situation in the more prestigious professions. Up to this point very little serious attention has been given to this teacher drop-out problem—to the approach of making teacher education a thoroughly professional program in its own right. By reducing drastically the number of insurance seekers and those with temporary interests, teacher education institutions might redeploy their resources to support a more adequate professional curriculum.

Traditions in higher education are real and persistent phenomena. One tradition which has not been questioned by large segments of the teaching profession is the stranglehold on professional preparation programs which results from a near universal American practice of boxing teacher education into the bachelor's degree program. A number of other countries have developed programs in the area of teacher education which have broken completely out of this pattern, and the more prestigious professions in America either have done so directly with post-degree professional programs or have made true professional status available chiefly to those with graduate degrees. Many may not yet agree, but this writer would predict that the persistent problems of teacher education will not really be solved until and unless professional teacher education has broken out of the stranglehold of the bachelor's degree curriculum. This change is not likely to occur quickly, but as truly professional patterns of preparation are designed, it will become increasingly obvious that the four-year bachelor's degree program simply does not provide enough time to complete this preparation to satisfactory levels of professional competence.

The decade of the 1960's has witnessed the introduction of a great number of so-called *innovations* and modifications in teacher education. Unfortunately, many show little difference from practices explored in the 1930's as not to be genuine innovations at all. Others have been promoted as if they were *panaceas* that would solve all the problems. A reasoned approach to the total situation forces one to recognize that there are no single panaceas and answers—the improvement of teacher education just isn't that simple.

In summary, it must be emphasized that the end of the 1960's provides a vastly different picture from that which faced the teacher educator at the beginning of the decade. The true innovations and developments, the research into teaching, accelerated developments in the behavioral sciences, the expanding instructional technology, as well as the sharply increased challenges, have combined to give the scholar and the practitioner in teacher education more professional resources to work with and a more sharply focused image of the needs and demands upon professional preparation for teaching. The real caution that must be sounded is that the demands are so great that time is of the essence. The demand is now! It behooves all segments of the teaching profession to get a clear perception of the needs of the future (such as the kind of professional teacher needed for the 1980's) and begin at once to design radically different programs to provide truly competent teachers throughout our vast educational system.

## TEACHERS FOR THE 1980's

Increasing demands within the schools and evolving trends begin to provide glimpses of many of the tasks to be expected of teachers in the 1980's, an era which once seemed so far away but now seems to be approaching with frightening speed. For basic documentation, just one additional area of general concern will be added to those of the previous section. The concept of differentiated staff with a hierarchical set of professional levels taken together with several types of paraprofessionals has already become common in several professions as well as in business and industry. A similar movement is progressing rapidly in teaching to the extent that general acceptance of this development becomes a certainty rather than an area of prophecy.

The evolution of a concept like differentiated staff forces a profession to provide practical role definitions for the various levels and, at the same time, to develop appropriate but different preparation programs for the various roles. The dimensions of such a task almost stagger the imagination in a professional area as large as teaching. In the discussion which follows, the characteristics of the teacher for the 1980's will be those of the highest level professional teacher, whose status of prestige and remuneration hopefully would put such persons on a par with the highest levels in many of the more distinguished professions.

In studying the following paragraphs, the reader is asked to keep in mind the need for a teacher education pattern that will produce teachers possessing a very high level of effectiveness. An easy way to say it, but a very difficult standard to attain, would be that each teacher who reaches the highest level of certification and professional stature would have demonstrated a high level of professional competence and a reasonable level of assured self-confidence. Less than this will prevent the profession from reaching acceptable levels of prestige and compensation. Assuredly, not all teachers will achieve equal levels of competence in all of the identified areas, but it is reasonable to assume that the top professional teacher must attain competence in many areas of knowledge and skill. This teacher might be called an *instructional specialist* and a *team leader.*

### *Diagnostician of Pupil Needs and Learning Problems*

Many young teachers of today are so concerned about discipline, group control, and direction that they almost lose sight of the individual pupil's real needs and problems. In solving the educational problems that society and the country want solved, it becomes increasingly clear that each individual must have his needs and problems identified if any teacher is actually going to help him attain realistic goals. The professional teacher must be knowledgeable in a wide range of abilities, skills, aptitudes, and interests. Clearly, no teacher can become a specialist in the treatment of the whole range of mental, physical, emotional, and social disabilities, but much basic knowledge is needed to make preliminary identifications, secure competent specialized diagnostic service, and to understand the basic rationales that are used in the treatment of the various disabilities.

### *Developer, Applier, and Evaluator of Learning Strategies*

Based upon the competencies described above, the professional would then need to select and design appropriate learning strategies, assist the learners in adapting these strategies to their own needs, and evaluate the resultant effectiveness of the strategies used. This skill could not be brought to a high level of effectiveness without a very broad understanding of learning theories, research results, and extensive directed experience in this aspect of teaching.

### *Instructional Leader*

For many years teaching has been a public profession but has been privately practiced. The teacher goes into his (or her) classroom with a group of learners, closes the door, and becomes the king bee (or queen) over the group. Older teachers who have never worked with prospective teachers in their classrooms frequently have difficulty in directing many of the wide range of participatory experiences—especially those which do not consist of sitting and listening or of taking over the class as a student teacher. In short, teacher preparation of the past and much of the present has not prepared young people to work with other adults in teaching. Today, a wide variety of team efforts are being used and explored, and at least three different levels of leadership will be required of the professional of the future. These are: (1) directing the work of assistant teachers and paraprofessionals, (2) serving as a member of an instructional team, and (3) serving as the leader of a teaching team composed of several different levels of differentiated staff. A new kind of sophistication in interpersonal relations will be required of these new professionals.

### *Specialist in the Wise Use of Instructional Technologies*

For many years teachers have been urged to make better use of a variety of types of the new media, while in more recent years schools have provided much more such equipment for teachers. Unfortunately, the results have often proved very disappointing. The problem is not just one of teaching faculties to use new devices and getting them to do so, but a much more sophisticated level of understanding and skill—that of a complete understanding of the media and their virtues and limitations, plus acquiring a comprehensive understanding of appropriate learning theories. In the popular parlance of the day, this means a comfortable familiarity with the hardware, understanding of and skill in developing the software—teaching materials and programs—as well as the ability to use the wide range of instructional technologies functionally and effectively.

### *Specialist in Curricula*

In the past teachers have become accustomed to being handed a curriculum or a textbook and expected to follow this with some degree of systematic approach. Recently, however, more and more teachers have been involved in curriculum modification and development, but many never had an introduction to curriculum theory or preparation for developing one. The instructional specialist—team leader of the future—may very well become a leader in all of these operations, evaluating, modifying, and developing curricula. If the teachers' organizations press their demands for teachers to operate as genuine professionals, making responsible decisions governing their professional activities, then the professional teacher of necessity cannot avoid having a major role in curriculum operations.

### *Specialist in Evaluation Techniques*

Most present-day beginning teachers have had a very limited introduction to the vast array of evaluation techniques. If a major part of the professional teacher's time is to be spent in developing, applying, and judging the effectiveness of instructional strategies, then clearly the teacher must be able to decide which evaluation techniques to use and be able to use them effectively. To do this implies being very knowledgeable in both formal and informal procedures, objective and subjective approaches, as well as in reporting the results of evaluation to pupils, parents, the public, and the profession. The newer concepts of behavioral objectives for teachers, as well as such objectives for pupils, is another aspect of modern theories of teaching, and new teachers need to understand this approach and have had experience in using it.

### *Specialist in the Laboratory Phases of Teacher Education*

There is indeed one certain trend in teacher education which shows no sign of reversing—the public schools are being steadily called upon to assume an increasing amount of responsibility for the laboratory phases of teacher education. Here and there throughout the country major programs are in progress to raise the level of teachers' understanding and skill in teacher education activities. As this process proceeds and teachers become more sophisticated in teacher education activities, the roles of the student teaching "team" will change. As a result, classroom teachers will assume more and more responsibility for directing the laboratory experiences of prospective teachers. As one result the role of the college supervisor will shift to working less directly with the student teacher and more through the supervising or sponsor teacher. Some school superintendents are beginning to believe that one of the best ways to improve their school system is to develop an outstanding student teaching program or, more broadly, an excellent teacher education laboratory program. An essential element in a comprehensive differentiation of staff is to enhance the role of the practitioner who is charged with directing the clinical or laboratory phase of the preparation program. Achieving demonstrated skill and success in this area is one more way to provide a special category of distinction to which professional teachers may aspire.

## NEW DEMANDS UPON THE TEACHER EDUCATION CURRICULUM

Teacher education activities are in a mild state of ferment. Many new emphases are being studied, various approaches are being explored, several specific activities are probably being oversold; but withal desirable directions for increased effort and improvement are beginning to be visible through the fog of tradition and uncertainty. A number of important directions, guidelines, and major concerns are developed briefly in the following section. The faculty of any given college should recognize at once that probably no institution will consider all of these areas. But, on the other hand, college faculty members who consider themselves true teacher educators are indeed responsible for study and leadership in these and related directions.

To provide able, professional career teachers both for the immediate future and the long pull, *preservice and inservice teacher education* should be joined, lengthened and made truly functional. Within this totality of professional effort should be included professional selection, certification, orientation, and induction into the role of the practitioner and the maintenance of high standards of professional performance. Such a total effort will require the cooperation of all members of all segments of the profession of teaching.

For more than a decade the National Commission on Teacher Education and Professional Standards as well as the National Council for the Accreditation of Teacher Education have emphasized the *all-college approach to teacher education.* In various institutions progress has been made. However, it is still painfully obvious that on most campuses there are vast resources that have not yet been marshalled into this total professional effort which is so extremely important to the national welfare. It is time to deemphasize talk and push for action and cooperation.

One of the less publicized but more serious criticisms of teacher education has been its failure to "practice what it preached" in the area of *individualized instruction.* College students have often been painfully aware that their professors tried to teach them how to individualize their efforts in teaching children, while at the same time forcing prospective teachers through a stultifying lockstep program that admitted little or no variation for either individual differences, needs, or previous background. The level of readiness for professional learning varies amazingly, while the background of professional and preprofessional experiences is extremely great. There may actually be no other approach which would improve teacher education as much as to have competent, empathetic professor-counsellors work with individual students throughout their teacher preparation years, diagnose their needs, adapt their experiences to their needs, and modify the curriculum to suit their rates of development.

A generation ago there was much criticism of teacher education because so many of the experiences of students were obtained in the so-called "hot-house" atypical laboratory school. Even today, when most experiences are provided in regular public schools, many students still find that the course content does not seem relevant to what they think will be their practical, real needs as teachers. There surely are no single or simple answers as to how to *make professional courses functional* for prospective teachers, but there is not the slightest doubt that ways must be found to succeed in this effort for the vast majority of prospective teachers. If the profession is to be provided with a constant infusion of new members who understand professional content and who are competent in using that knowledge as a basis for steadily increasing their professional skill, new patterns of functional courses will be a necessity.

For years many teacher educators believed they should emphasize only cognitive content. Persons who are thoroughly familiar with the very demanding tasks of present-day teachers are convinced that both the *cognitive* and the *affective* domains of *knowledge* belong in the teacher education curriculum. However, to do this effectively raises a number of urgent unsolved problems. Most people are acutely aware of the explosion of knowledge in the physical sciences and their applications. But many have not become so aware of a similar (although somewhat slower and less well-developed) trend in the social and behavioral sciences upon which the profession of teaching depends for much of its basic content. No longer is it adequate to teach college students to soak up facts as a blotter, for two most significant reasons. First, no one can ever hope to learn all that it would be desirable to know, and, secondly, there is always the problem of how one keeps up on new knowledge as it becomes available. Old solutions must give way to new approaches. Professors now must shift their emphasis from demanding memorization of content to teaching the structure of the discipline, the key concepts, the major issues, the vocabulary, the organization of the field including how to find what one wants to know and how to use it when it is found, and finally—and perhaps most important—how to keep up to date in a given field.

A somewhat similar but perhaps even more difficult challenge arises in the *affective* domain. Much is heard and written these day about *sensitivity training*. But some of the earliest and best-known methods are open to serious question when used as a routine approach with college upper classmen. It is one thing for experienced business and professional people to apply to enter group therapy sessions, but quite another thing to require the same participation as a part of a college curriculum. Other types of sensitivity training are being designed and explored so that hopefully some appropriate and effective processes may be developed. But few who know conditions in the vast variety of urban and rural populations would question the need for some adequate type of preparation for young people who will be called upon to work under the pressures and conditions which exist in schools today.

## NEW AND EVOLVING PROCEDURES IN TEACHER EDUCATION

Seldom has a curriculum worker in any field, and never before in teacher education, had available for his use so many *new and refined procedures* plus devices and processes from the wide range of the *new media* or instructional technology. Because the possible adaptations are almost limitless, only a few of the major groupings will be mentioned here.

Recent research in teaching has resulted in a broad array of various types of the so-called *interaction analysis*. Unfortunately, most of those that are well known have come from research methodology and are limited to the analysis of verbal interaction alone. The need is for refined systems that are more precisely adapted to the requirements of learning situations.

*Micro-teaching* is a refinement of a common, long-used methods course device of self-teaching and the use of small groups for instructional purposes in the laboratory schools. In its present form it is a very potent device for developing the fundamental, behavioral skills of teaching. At the other extreme the *critical incident film* or recording has been shown to be very effective in stimulating students under an able instructor to analyze principles of educational psychology and methodology and, therefore, to examine bases for decision making in teaching. In between these extremes is a developing technology which can be defined quite precisely as *simulation* procedures. Apparently, the most likely development for this approach is to provide comprehensive data on a group of children and the individuals within the group through the multimedia. Then, specific realistic situations are presented to which the prospective teacher is expected to respond by utilizing both types of understanding from the two previously discussed approaches—bases for decision making from critical incident films, and fundamental teaching behavioral skills as developed through micro-teaching. The multimedia or "hardware" is currently available; the corresponding "software" programs are still mostly in the developing stages, but should steadily become both more numerous and more useful.

The *portable videotape recorder* is perhaps the most dramatic of the newer devices now available to teacher educators, but the range of other types is very great—*open- and closed-circuit television, single concept loop films, the overhead projector, dial access,* a much wider range of uses for *audiotape recorders, the multimedia study carrel,* not to mention the possibility of *computer-assisted instruction in teacher education.* Much exploration and research is needed to bring these approaches to their maximum potential, but the videotape recorder seems especially significant in that it provides a "mirror image" for the prospective teacher and the capacity for the instructor to record classroom episodes and other types of situations as laboratory specimens for more effective professional study in college classrooms. Naturally, finance is a problem, but judging by other recent developments, teacher educators should be very diligent to prevent a recurrence of the common phenomenon of getting too much equipment before the teachers are stimulated and prepared to use it, only to discover that the equipment remains unused.

Previous paragraphs in this section have addressed themselves chiefly to various aspects of college instruction. From this point on, however, the emphasis will be on more comprehensive suggestions or guidelines for the improvement of the total teacher education process with particular stress on those ways in which cooperative effort can bring about improvement. However, in this chapter no detailed treatment will be included on the strictly inservice aspects of teacher education, even though, to be optimally effective, programs must be designed with direct concern for the comprehensive whole of both the preservice and inservice aspects.

The entire range of professional laboratory experiences has been severely handicapped by the lack of a comprehensive theoretical base. But beyond that a most serious limitation has been the absence in most cases of a professionally adequate *design*. Improved experiences can result from a joint effort of schools and colleges in the design phase. Earlier, the need for individualizing experiences was stressed; what is needed are not new rigid designs but rather many new general designs with careful attention to the needs and problems of prospective teachers and how the designs can contribute to satisfying their needs and solving their problems. With a wide range of professionally and expertly developed experiences from which to choose, individual needs can be served far more adequately than with the now so common lock-step progression utilizing only a very small number of basic designs.

As an aside at this point, it may be appropriate to indicate that many of the new media and refined procedures may in the long pull prove to be more effective and more commonly used at the inservice than at the preservice level. For example, micro-teaching, critical incident films, simulation, mini-courses, the multimedia study carrel, the mirror image of the videotape recorder, the use of models and even of recorded classroom episodes all would provide new and improved ways for the experienced teacher to objectify teaching processes and problems away from himself. This equipment gives a ready approach to the teacher who wants to study ways to improve any one of a myriad of specific teaching behaviors and procedures.

The number of college-controlled laboratory schools is rapidly declining. As a result, student teaching and internship types of experiences will be conducted almost exclusively in public schools from now on. But a newly evolving arrangement gives promise of much greater dividends in the long run. In New York City it is called the "campus school" movement, but everywhere the process involves *an equal partnership of a school faculty and a group of college faculty* evolving cooperatively some joint professional activity which may relate specifically to teacher education or to the improvement of teaching-learning in the school, or both. If properly utilized, this cooperative approach has greater potential for teacher education than the college-controlled laboratory schools ever had.

In the operational phases of student teaching and all related experiences, another approach to equal partnership has now been developing for some years, and new cooperative structures have evolved. Usually, the bases for such activities are relatively small areas. They are often called *school-college teacher education councils* and may cover one urban area, a region around a college, or a larger area up to the size of a small state, including from one to many school systems and from one to a dozen or more colleges. Councils such as these provide a channel for developing and improving policies, handling problems of operations, reducing conflicts and establishing rights for all agencies, even to handling financial matters, exercising leadership in inservice education for members of the "student teaching team" and various kinds of professional relationships and opportunities for professional development.

In a considerable number of widely scattered places throughout the country, *new organizational patterns and relationships* are being designed, explored, and evaluated. The fact that the persistent problems of student teaching have not generally been solved anywhere in the country makes these efforts all the more important and worth watching. No one of the new patterns has yet appeared to provide a relatively certain solution to several of these problem areas, but some of the newly conceptualized centers and patterns for supervision using the so-called clinical professor concept and team supervision appear to hold much promise.

In each of the two previous paragraphs the patterns reported include some teacher education projects which are clear examples of *a new kind of specialization in teacher education*—such as the preparation of teachers for inner city or ghetto schools. As yet, it does not appear certain whether the colleges or the schools will finally have to assume the major responsibility for the preparation of specialist teachers. Up to this point some cooperative effort seems an essential part of any program, and much joint exploration ought to be carried on in many places.

For years teachers have looked longingly at some of the older and more prestigious professions and specifically at their ability to control their own preparation programs and licensure. One means to influence any movement in this direction is the development and enforcement of *standards for preparation.* Because of numbers and the complexity of both a public profession and the wide range of institutions preparing teachers, the task is most complicated in the field of teaching. Progress is being made, even though slowly and with a very long way to go. Both at the national level and in several states, efforts are under way to improve standards and especially those that apply to teacher preparation programs. Teacher educators should keep informed of these efforts and recognize the place that standards can have in professional improvement. Standards also have their limitations, for minimum standards may become maximum standards tending to pull all programs down to a level of mediocrity. The need is for some kind of minimum requirements to set a level, "below which thou shalt not," but at the same time to find well-stated rationales that will serve as guides to new and improved programs without the stultifying effect of implying the necessity for uniformity which tends to restrict new developments.

During this decade much has been said and written about the need for *state leadership* in teacher education and especially *in the laboratory phases of teacher education.* Problems such as large numbers, competition for student assignments, lack of finance, inadequate numbers of well-prepared supervising-sponsor teachers, more frequent appearance of arbitrary restrictions by local school systems, and examples of college domination are analyzed by many as suggesting that few solutions can be found unilaterally and that some kind of state cooperative action is necessary in resolving acute problems. The evolution of state responsibility in the area of student teaching and related experiences has been moving very slowly. Leaders in the field are pointing out that the cooperation of the schools and colleges under some sponsorship from the state department of education, together with the support of the appropriate professional organizations, should provide policies, procedures, and financial support for solving persistent problems and spearheading movements for improvement. Generally, it appears that college faculty people must assume a lead role in bringing these groups together and helping all groups to sharpen their perceptions of the problems and possible solutions.

Many of the approaches described in this section could be facilitated considerably if good research data were available. While the profession cannot stop everything and wait for results of research, college faculties should recognize the need for research and marshall the support of all involved agencies in securing adequate resources. Here again, the key to quality is in the design of the research. Abundant evidence is available to point up the difficulty of designing significant research in teacher education. But until better research projects are designed and completed, many aspects of teacher education will be structured largely on hunches or guesses.

Very closely related to the above paragraph is the whole range of knowledge—*important concepts*, if you will—needed to support improvements in both the content and procedures of teacher education. Again, unfortunately, not enough teacher educators are scholars in the *related disciplines of the social and behavioral sciences*, and, significantly, it is these disciplines which will provide many teacher educators with the tools and the expertise necessary to improve the total process of professional preparation. In addition, there is considerable reason to believe that some of the key techniques for breakthrough research may already have been developed in these related disciplines.

This overview of challenges and needed developments in teacher education was designed to serve as an introduction to a series of chapters presenting illustrations of important developments in teacher education. Indeed, the content of these chapters presents topics that are closely related to some of the areas of interest which have been discussed in this chapter.

# Chapter IX

# A Perspective in Educational Technology*

The fusion of technology and education is having a dramatic impact on instructional procedures in our nation's schools and colleges. New and highly sophisticated instructional techniques are emerging at all levels of education, and there is good reason to speculate that the future of the various technologies in instruction may be quite different from their uses as we know them today.

This chapter deals primarily with the use and development of educational technology for preservice and inservice teacher education. Current applications of electronic instructional media are discussed, and emerging practices and forecasts are explored.

## THE PICTURE TODAY

Instructional television, as we now know it, is too frequently a teaching medium designed essentially for disseminating lectures to large classes. The possibilities of its use as a learning device by students in independent learning situations has been relatively unexplored. Many teacher training institutions, however, are experimenting with instructional television as a learning vehicle, e. g. microteaching, simulation and crucial incidents portrayals *via* videotape recorders, rather than as a dispenser of information in mass audience situations. The innovative practices employed by these institutions seem to forecast a new direction in the use of instructional television–toward more individualized and small-group applications of the medium. The use of videotape recorders–one of the most powerful instructional tools on today's teacher education scene–holds promise of turning television into a highly flexible teaching-learning instrument.

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## USES OF TELEVISION AND VIDEOTAPE PROCESSES IN TEACHER EDUCATION[1]

### *Substitute for Direct Observation*

Numerous teacher education institutions are using closed circuit television and the videotape recorder in laboratory experience classrooms. One of the most frequent applications of these video processes is in the area of classroom observation.

At the University of Florida College of Education, closed-circuit television is used in lieu of direct observations. The system, which connects nineteen originating stations of the laboratory school with ten receiving stations (classrooms) in the College of Education, was installed primarily to decrease the student observation load at the laboratory school.

The University of Massachusetts School of Education uses videotapes in the directed observation phase of the teacher preparation program. Before adopting the use of videotapes, the University used (and still uses) closed-circuit television to supplement observation. In making plans for an effective sequence of observation lessons on the closed-circuit television system, the faculty developed the idea of using videotapes. Subsequently, the decision was made to use videotapes in order to focus attention on more specific teaching activities, including the role of the classroom teacher, classroom facilities, curriculum considerations, and a structured overview of grade levels from one through six.

Advantages of classroom observation by closed-circuit television over direct observation are numerous. For example, far greater numbers of students can observe the lesson via television; traditional classrooms are not designed to accommodate large numbers of visitors or observers. Therefore it is almost impossible for *all* students in a given education course to observe directly in a classroom the same episode at the same time and then to participate in a discussion and analysis of the event.

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[1] Ten uses of television and videotape processes in teacher education are mentioned in this chapter. This list of actual and potential categories of use was prepared by a selected group of media specialists and teacher education leaders, called together early in 1967 by the M-STEP project director, who served as chairman. The committee met on two occasions. Its members included Harold E. Wigren, National Education Association; L. O. Andrews, the Ohio State University; Walter J. Mars, American Association of Colleges for Teacher Education; James E. Conner and Charles E. Trotter, Jr., U.S. Office of Education; Charles K. Franzen and George W. Slade, at that time members of staff, Multi-State Teacher Education Project.

The reader desiring elaboration of the ten uses should consult the M-STEP publication *Television and Related Media in Teacher Education* (Baltimore: Multi-State Teacher Education Project, August 1967) also repeated in Chapter IV of the current volume. This monograph is a compilation of papers describing emerging practices of video processes in teacher education institutions throughout the nation. The articles represent professional points of view and deal with successes of the programs as well as the problems encountered.

Observers usually are restricted in their free movement about the classroom lest this distract both the students and the teacher from the primary purpose of the educative process. Even when special observation areas are provided and one-way glass installed to minimize this problem, the limited view of what is actually going on is accentuated.

Videotaping equipment can be set up and a sequence taped at the convenience of the subjects involved—teacher, pupils, teacher education specialists. Once recorded, the experience is at the disposal of the college instructor as to the manner in which it may be used. He may schedule viewings at his convenience and in accordance with his teaching plan. He can select, edit, or combine sequences to suit his purpose, and the episode may be viewed repeatedly, whole or in part, by large or small groups.

The videotaped observation has several inherent advantages over either direct observation in the classroom or the closed circuit system. A primary advantage is that the recorded episode can be viewed, stopped, reversed and replayed, discussed and studied in great detail. The videotaped observation permits the instructor to preview the presentation, call attention in advance to specific or characteristic teaching techniques, and replay all or parts of the tape to reinforce specific points.

### *Self-Appraisal Process for Student Teachers (Including Micro-teaching Activities)*

The advantages of the videotape recorder as a tool for self-appraisal are almost too obvious to require discussion. Increasing numbers of teacher training institutions are recording on videotape the instructional behavior of their student teachers. A tape is made of the prospective teacher as he teaches in his own classroom. He later views the tape and is able to see and to react to his instructional behavior. Sometimes a supervisor or fellow student teachers may participate in a viewing and critique of a tape. Students may be taped several times during their student teaching experience in order to determine and evaluate their progress over long periods of time.

Getting consistently good audio recordings remains the major problem, report many of the institutions utilizing the videotape recorder for self-appraisal of student teachers. The problem of the camera in the classroom is less serious—in a relatively short time both the students and the teachers seem to lose their awareness of the equipment in the classroom.

The "Mirror image" self-appraisal process which the videotape recorder makes possible for the student teacher leads quite naturally to micro-teaching, a relatively new development in teacher education. Although micro-teaching practices vary slightly from institution to institution, the technique has some universal characteristics. Coined at Stanford University, the term "micro-teaching" is defined as " . . . a miniature teaching situation . . . created under controlled conditions. All of the elements of the teaching act are present. The uniqueness of micro-teaching consists of two elements:

(1) the ease with which the teaching situation can be controlled and manipulated and (2) the availability of immediate feedback for the student teacher."[2]

The student teacher is videotaped while he teaches a short lesson—generally not longer than five or six minutes. His "micro-class" may be his peers or a group of pupils, usually four to six. The tape is then played back, and the lesson is criticized and evaluated by the supervising teacher, the student teacher, and, possibly, his peers. The student teacher may reteach immediately, incorporating changes which have been suggested by his critics.

Major advantages of micro-teaching are (1) its concentration on a single, manageable teaching process or concept at a time; (2) the ease of thorough analysis, diagnosis, and suggested remediation; and (3) the opportunities provided for immediate reteaching and strengthening of processes discussed during the evaluation period.

Teacher education institutions engaged in micro-teaching activities report generally that their student teachers are enthusiastic supporters of this technique. They see it as a method for developing confidence in themselves as teachers before entering the classroom.

It should be noted that micro-teaching has been used not only in preservice teacher education but also in inservice training programs. Standford University has used micro-teaching in its inservice training with school districts in northern California, Brigham Young University has employed micro-teaching in Utah school districts as an inservice training device, and the Wayne State University College of Education reports: "We have received many requests from inservice teachers for an opportunity to engage in the same kinds of processes that student teachers are now engaging in. It appears that the micro-teaching self-appraisal technique has great application for inservice training."[3]

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[2] Clark Webb and Hugh Baird, "Selected Research on Micro-teaching." *Television and Related Media in Teacher Education* (Baltimore: Multi-State Teacher Education Project, August, 1967), p. 27.

### *Instruction in the Skills and Techniques of Teaching*

As early as 1963, the College of Education at the University of Delaware installed closed-circuit television equipment between the College of Education building and an elementary school classroom in the Newark Special School District. The system was installed for use in developing an arithmetic methods and curriculum course for elementary education majors.

The education students observe elementary school classes in arithmetic in their own campus classroom with the college professor present. This is a vast improvement over the usual procedure of traveling to schools to observe lessons and distracting the pupils and teacher in the process.

To supplement the closed-circuit television system, the College of Education uses several videotape recorders. Arithmetic lessons are taught by an experienced elementary school teacher or a member of the University staff, recorded on tape, and subsequently viewed by the University students at appropriate times. Since the University professor has an opportunity to review and plan in advance the type of lesson he wants to demonstrate to his class, it is possible for him to prepare his class for the observation, i.e., to discuss with his students before the tape is viewed the preplanning that went into the lesson and the particular aspects of interest.

The advantages and problems encountered in using television and videotape recorders for instruction in the skills and techniques of teaching are generally similar to those reported by users of these media in the other applications discussed above.

### *Simulation*

The simulation technique , sometimes called gaming or role playing, consists of portraying on videotape or film common classroom problems which teachers encounter. The technique, designed to help prospective teachers develop judgment in dealing with classroom occurrences, illustrates ways of handling both individual and group problem situtations in a classroom.

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[3] John W. Childs *et al.*, "The Use of Videotape Recording in Teacher Education." *Television and Related Media in Teacher Education* (Baltimore: Multi-State Teacher Education Project, August, 1967), p. 26.

The State University College at Brockport, New York, has developed a successful simulation project in its teacher education program. Ten problems deemed adaptable to presentation via videotape recordings were selected from thirty-two problems studied. Videotapes from 45 seconds to 9 minutes running time were made for the following critical teaching problems: (1) dealing with constantly disrupting child; (2) handling children's aggressive behavior toward one another; (3) motivating individual students; (4) adjusting class work to the rapid learner; (5) involving large numbers of students in class discussion; (6) learning to cope with clerical work associated with teaching: (7) guiding children toward doing independent work with a minimum of disturbance to others; (8) providing appropriate work for the class while the teacher assists small groups or individual children; (9) learning to control the student teacher's inpatience with students; and (10) dealing with children's reading problems.

At the same time that the problems were being recreated, the project team was constructing a hypothetical school and school district in which the problems were to occur. Filmstrips were made of a community and an elementary school setting. Magnetic tape recordings provided dialogue and oriented the prospective teacher to his new job as fifth-grade teacher.

### *Instruction by Resource Persons of National Significance, e.g., Distinguished Lecturer Series*

The imaginative use of television and videotape has the potential of extending the influence of the great teacher (or nonteacher, scholar, or lecturer) to thousands, and even millions, of people. Not only present but future generations can benefit from lectures that have been video recorded. Clearly, not only the teaching community—but the entire education community as well as the general community—could reap rewards from this method of instruction.

### *Telecourses for Inservice Education*

Many types of media utilization in preservice teacher education can apply equally well to inservice teacher training.

Between 1965 and 1967, well over 20,000 elementary and secondary teachers in Georgia viewed a series of videotapes on the teaching of reading. A joint undertaking of the Georgia State Department of Education and the University of Georgia, the project was designed for large-group instruction. Clearly, such activities can be developed for small-group or individual applications.

In several states, television courses have been conducted for inservice teachers in mathematics, science, literature, music, art, languages, and other subject areas. Yet, educators have merely scratched the surface in their efforts to employ television as a vehicle for teacher training: its potential usefulness in facilitating continuous growth of teachers has hardly been exhausted.

### *Other Functions of Television and Videotape Processes in Teacher Education*

In addition to the six uses of television and videotape processes discussed above, there are other applications of these media to teacher education programs. Because these additional categories of use are sufficiently self-explanatory, we have elected to list them without discussion. The reader will have no difficulty relating them to some of the exemplary practices discussed above.

Teleconferences as aids to preservice and inservice teacher education programs.

Recording and evaluating progress of student teachers.

Recording pupil reactions to teacher behavior for further analysis and study.

Preserving original data for later analysis and research.[4]

## ESSENTIALS OF EMERGING PRACTICE

### *Communications Satellites*

The potentials for educational applications of communications satellites are already being explored. Sometimes called "electronic switchboards in the sky," communications satellites are essentially signal repeaters whose height enables them to provide coverage over a very large area. A single satellite can, for instance, cover all of the United States. Satellites may be designed for a single type of service such as television relay, or they may be multi-purpose. In this discussion, we are concerned primarily with television satellites as they apply to instructional television.

The path of a typical "via satellite" television relay includes the following steps: (a) the program originates in the television studio, and (b) the signal is sent via common carrier or other conventional land lines to (c) a satellite earth terminal capable of transmission, from which (d) it is sent to a communications satellite 22,300 miles above the equator, which (e) retransmits the signal to one or more receiving earth stations, which send it along (f) via common carrier or other land lines to (g) conventional television stations, which retransmit it for (h) reception by conventional television sets in homes and classrooms. (12)

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[4] Brigham Young University Faculty members are experimenting with videotapes as aids to placement. See Chapter VI of this volume.

Wilbur Schramm of Stanford University forecasts the advent of "direct" satellites by 1975. "Direct" satellites are those emitting a signal sufficiently powerful to be picked up by a home television receiver.

Hughes Aircraft, suggests several ways in which satellites might be applied to educational needs. Some of these include:

> To provide an Instructional Television Fixed Service (ITFS) network. ITFS is a relatively recent means by which schools and colleges may transmit over as many as four television channels in the 2500 MHz band. Like broadcasting, these transmissions are "over the air"; but unlike true broadcasting, the signals cannot be received by the general public but only by schools equipped with special antennae and converters. A communications satellite could link the growing number of ITFS installations (and some conventional closed-circuit television systems as well) to allow them to share programing resources with the possibility of better software at lower per-student cost.
>
> To provide computer-assisted instruction by permitting widely scattered schools to tie into the resources of a central educational computer complex. Again, a chief advantage would be the lower per-capita cost resulting from economies of scale.
>
> To provide a satellite interconnection base for EDUNET, an extensive proposal for linking colleges and universities for both computer communications and television. (12)

Satellite systems offer a number of advantages–high capacity, versatility, flexibility, and, mainly, low cost. Once the satellite system is set up, no further satellite costs are incurred as ground terminals are added.

Conventional television stations have difficulty operating profitably if they are devoted to educational and instructional programing in the broadest sense. By extending the coverage cheaply, and thus the audience to which the program material is directed, a satellite system would be practical for educational television (now frequently called "public television") and for instructional television.

The chief feature of a communications satellite is its ability to cover very large areas. For instance, broadcasting to the members of a particular profession in the United States is technically and operationally feasible. Physicians, lawyers, engineers, and teachers are potential recipients of services which a professional satellite system could provide.

The Biomedical Communication Network has been established within the U.S. Department of Health, Education, and Welfare under the recent legislation, Networks for Knowledge. This network will provide full telecommunications services for all elements of the medical profession. (17)

Would a communications satellite be feasible for the teaching profession? An instructional television satellite system could serve the educational needs of the millions of individuals engaged in preservice and inservice teacher education.

In his article, "A British View of American Educational Broadcasting," Richard Hooper of the British Broadcasting Corporation is skeptical about the future of communications satellites for instructional television in the United States:

> The failure of the Midwest Program on Airborne Televised Instructional [MPATI]–the dream of 1961–is glossed over at convention-ville as everyone talks excitedly about satelites for nationwide ITV. If MPATI failed at 23,000 ft., why should a satelite be any more successful higher up? (6, p. 31).

### *Community Antenna Television (Cable Television)*

Community antenna television (CATV), or cable television, which originated as a number of small, locally owned and operated systems that delivered improved television reception to hill-locked communities in Oregon and Pennsylvania, has expanded into a major industry. In 1968, 1900 CATV systems were serving over three million homes (5 percent of American homes). Unlike most technology, CATV began in the rural areas and is now advancing into the urban and suburban areas. The growth and future of CATV have important implications for education.

*CATV and Closed-Circuit or Instructional Television.* Most CATV operators, as part of their public franchise, provide free connections to each school which the trunk lines pass. Distribution of the signals to various classrooms within the building is generally the responsibility of the school. In some cases, the CATV system serves all the schools of the district; in others, only those "in town." Minimally, the CATV operator provides the schools with improved reception of broadcast signals including, perhaps, one or more ETV signals. In some communities, the CATV operator may make available to the schools one or more vacant channels on which the schools may transmit their own programing. Teacher education institutions in towns or cities in which CATV is proposed might well look into the question of whether the CATV operator can provide them with vacant channels.

*CATV Multi-channel Capability.* The earliest CATV systems could transmit only on the "low-band" VHF channels 2–6 and were thus limited to a few signals. The current state of the art, however, is moving beyond this limited channel capability.

With a minimal investment in twenty-channel converters for the schools only, plus some additional necessary equipment, a conventional CATV system transmitting to homes on channels 2–13 might also carry one or more private channels which could be received only in the classrooms. Besides the obvious advantage of privacy, copyright restrictions might become less binding since transmission of the material to schools only may not constitute public performance in all cases.

In continuing medical education, ETV stations sometimes broadcast programs especially for members of the medical profession. Because of the specialized audience, these programs may be broadcast late at night. With a private CATV channel, these programs could be broadcast at convenient hours and delivered only to doctors and medical students in their homes, offices, hospitals, or classrooms.(10)

Preservice and inservice teacher education programs could be transmitted to students and teachers via private CATV channels. Their value would be augmented if these programs could be transmitted at times convenient to the students' and teachers' classrooms or homes, without making the material available to the general public.

The technical capabilities of CATV are impressive, and CATV enthusiasts predict that their industry will provide the basis for a multitude of services. This is indeed possible since the CATV path, with proper input and output equipment, is wide enough to carry two-way television, computer signals, facsimile transmission, and a host of other services. Educators would be wise to study the implications for education.

### *Instructional Television Fixed Service (ITFS)*

In the early 1950's, most instructional television programing was transmitted open-circuit to a small number of television sets. As instructional television developed, master antenna systems were installed in school buildings so that many television sets could be used. Shortly afterwards came local origination within a building and then local origination for transmission throughout a school district or system. A one-building master antenna and distribution systems were within the capability of many school organizations, but multi-building systems presented a major problem. The task of interconnecting school buildings could be accomplished by the telephone company, but service and termination charges were often astronomical, precluding many schools from using telephone company cable.

Then evolved Instructional Television Fixed Service (ITFS), better known as 2500 MHz TV. ITFS rendered schools independent of the telephone company. It provides a means by which schools and colleges may transmit over as many as four television channels in the 2500 MHz band.

### *Electronic Video Recording (EVR)*

Electronic Video recording is a system that makes it possible to show on conventional television sets prerecorded programing from motion picture film and videotape. A major advantage of the process is that it is relatively low cost.

A recorder will be able to automatically pick up and store any program that is on any given channel at any given time, to be played back at one's option. Also, video programs will be available for purchase much in the same way as are audiotapes and records today.

Copyright regulations should be carefully investigated by a school system if closed or open circuit rebroadcast is contemplated.

### *Computer-Based Instruction*

The era of teacher-based instruction is about to fade, to be superseded by an era of instruction involving man-machine interaction. The machine is the computer.(5)

Already, computers are demonstrating their usefulness in teaching spelling, mathematics, reading, and a host of cognitive skills. The computer offers an intense learning environment. The teaching profession must provide validated programed materials for the computer to assist the instructor in specific cognitive areas.

The main value of employing computers in instruction is their capacity to contribute to the individualization of instruction. This is also an important factor in teacher education programs. The memory, logical powers and endless patience of the computer account for its success as an instrument in individualized instruction. The computer's memory powers enable it to furnish a detailed pattern of student responses for purposes of automatic evaluative processing. The computer can organize information in structures dependent on the specific characteristics of the individual, characteristics that differentiate him in terms not only of learning speed but also of interest and the capability for dealing with new situations. Though computer based, computer- assisted instruction is student centered.

### *Inservice Teacher Education*

Our changing world and the information explosion make great demands on all state departments of education to assist in the dissemination of knowledge. For example, all educators must have the latest knowledge of what to teach and how to instruct various ethnic groups in our society. Each department of education should provide state and federal appropriations for training and revitalization of all professional personnel through inservice education.

State networks for inservice education are long overdue. Long range plans should include combined thinking of the state department, public school administrators, and teacher education specialists in higher education institutions. Vital services must be provided by the state department that local school systems cannot provide for themselves. New devices and systems must be made available. State officials can no longer afford the attendance ratio of 1 to 15 or lower for efficient inservice meetings.

The state network should consist of several inservice laboratory centers. The regional center, each located near a teacher education institution, should provide training programs to representatives of local school systems who would further disseminate information to teachers through local inservice programs.

Learning is an individual activity. The development of learning laboratory centers provides inservice subject matter specialists with a facility to individualize presentations on a specific problem of instruction. It would seem appropriate to teach teachers through the methods teachers should teach. For example, the local center could provide a program for representatives of each school building who teach the same grade, ability level, subject area or other instructional variables that are concerns of each participant. The representative, presumably, would assist other teachers and administrators within the same school building.

Regional meetings allow for individual activity of participants. Knowledge can be conceptualized by various types of activities for skill

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development of participants. Members of state departments should offer presentations to the professional staff of the inservice laboratory center. Instructional materials of all forms of media should be available from the state for participants to use during their local inservice meetings. Knowledge of availability of instructional behavioral objectives, individualized media materials, and techniques of utilization are examples of ideas which must be communicated effectively and rapidly.

The ability to use the storage and retrieval capabilities of the computer as a problem-solving tool has vast potential in teacher education programs. An individual can simulate or play actual problem-oriented "games" which enable him to make real-life decisions about complicated situations. These are based on the alternative relationships that the computer can describe.

The computer can perform certain instructional tasks better than the human teacher. The research challenge is to catalogue those aspects of instruction that are most appropriate for the machine teacher, on the one hand, and for the human teacher, on the other.

A statewide, computer-assisted learning network could be one vehicle for supplementing current practices. Computer-assisted learning terminals might be located statewide and operated on a large, time-sharing computer system or via a series of smaller computer satellites located throughout the state. The terminals could be readily accessible at a convenient location (the teacher's school or a neighboring school) and would be available for use from early morning until late in the evening, six days a week.

It was this type of thinking that motivated the State Education Department of New York and System Development Corporation to investigate the feasibility of implementing a computer-assisted learning system for inservice training of biology teachers.

To assess whether the computer could be effective if available for use at the teacher's convenience, an 18-hour daily use period was provided during the field test. The computer-assisted learning terminal was operated during a regular school week, and teachers received computer instruction before, during, and after school. The biology teachers involved were asked at every step to identify the strengths and weaknesses of the computer-assisted learning approach to inservice education.

Appraisal and achievement tests were conducted during the pilot study, and a preliminary assessment was made of the efficacy of computer-assisted learning for inservice education. Some of the conclusions are as follows: (3, pp. 54-56),

> Biology teachers did seem to learn from their interaction with the computer-based learning sequences presented at the terminal.
>
> A teaching terminal of this nature can be successfully operated by a teacher following a minimum orientation period.
>
> The general attitude of the teachers toward the innovation was favorable. (One would expect that teachers would have more negative attitudes toward this innovation, which has more complex dimensions than educational innovations such as programed textbooks or closed-circuit television. However, this was not the case.)
>
> The teacher evaluations indicated that the materials presented at the terminal were better organized, utilized teaching aids more effectively, were more comprehensive, sequenced better, provided more feedback, were more efficient, and had less potential for creating boredom than "typical classroom presentations."
>
> The computer system and typewriter were the most reliable components of the computer-assisted learning system, wheras the slide projector and tape recorder were less reliable and will pose major problems if used for any computer-based learning network.

Although this experiment in computer-based instruction involved the inservice area of teacher education, the project scheduled, as part of its follow-on activities, experimentation with computer-based instruction in preservice teacher training. Just as television and videotape processes are utilized in both preservice and inservice teacher education, so can computer-based networks serve both areas of teacher training.

### *Telecommunications*

Closed-circuit television holds great educational potential, especially when it is combined with computer and facsimile information storage and retrieval systems that make information available at the push of a button. The term "telecommunications" was coined to describe such a system. telecommunications includes all telephone installations, computer facilities and networks, teletype services, radio systems, and all other electronic audio and video services, including educational television and radio services.

> In Urbana, Illinois, the pioneer computer-assisted instruction team (PLATO) has been marrying television and the computer for some time. At The Ohio State University, the technologies of telephone, audiotape and headsets, videotape and cathode ray tubes, plus a mini-computer have merged into the maxi-medium of dial access. (6, p. 29)

Co-media work can give rise to fresh insights. For example, television at Boston's WGBH television station, Education Division has gained a dimension as a result of fusion with an increasingly significant educational medium–games and simulation. A long-standing criticism of open-circuit television as an educational tool is that it is basically a one-way circuit to passive viewers. During WGBH's broadcasts of *The Most Dangerous Game* and *Cabinets in Crisis,* viewers at home and in the classrooms phoned in advice to their respective cabinets (Yugoslavia, Soviet Union, U.S.A., etc.). They also wrote letters after each program, giving more detailed policy suggestions. During *Cabinets in Crisis,* 121 classrooms were participating in a rerun of the Yugoslav Aid crisis of 1950. Learners were active participants. (6, p. 30)

By media-mixing television and programed instruction, new and different forms of instructional television are possible. This is being done successfully for the medical profession in New York State and Ohio. Why not for teacher education?

Indiana has a sophisticated statewide telecommunications system of video and audio circuits and talk-back lines. Via an instructional television two-way communications system, students at Indiana University, Indiana State University, Ball State University, and Purdue University can take courses and participate in classroom discussion with the professor. The student can be at any one of the four state universities or at one of their total of eleven regional campuses throughout the state.

When fully developed, this electronic network will provide a capability for the exchange of instructional television, programed and computerized instruction, teletype, telephone, and high-speed data processing and information retrieval materials, thereby permitting the sharing of scarce resources among institutions and multiplying the utilization of the best elements and best programs in the state. (8, p. 54)

It could carry continuing education and inservice training programs to a wide variety of professional groups in business, education, medicine, law, and industry. It could carry extension and adult education into every county in the state.

The School of Education at Indiana University is linked to the laboratory school over a mile away via a closed-circuit television system. While the primary goal of the system is to provide observation of typical classroom structures, it also serves as an instructional tool for the laboratory school faculty.

Illinois has conducted extensive studies during 1967-1969 to determine its educational telecommunications requirements. The state is now moving toward the installation of a statewide telecommunications system which will serve not only the educational establishment but also a myriad of the state departments and agencies. In the past few years, Iowa, Michigan, and Minnesota have also made extensive studies to determine their educational telecommunications needs. California, Colorado, Idaho, Mississippi, Nebraska, New Mexico, New York, North Carolina, Utah, and Wisconsin have designated telecommunications managers or coordinators in an attempt to improve services in these states. In 1967 the Federation of Rocky Mountain States adopted policy recommendations that enhance the planning and development of telecommunications within the individual states. (4)

A program now in operation and one which aspires to develop the educational telecommunications concept to maturity is EDUCOM (the Interuniversity Communications Council), with headquarters in Boston, Massachusetts. Formed in 1964 as a nonprofit corporation by six universities interested in furthering biomedical communications through the application of modern technology, EDUCOM no longer restricts its functions to the health fields—all aspects of education are within the boundaries of its activities. In addition to the goal of interuniversity communications, EDUCM aspires toward the sharing of resources among its member institutions through an electronic telecommunications network. The EDUCOM membership in late 1968 consisted of approximately 100 institutions of higher education with some 250 campuses. (13)

A current EDUCOM program is EIN—the Educational Information Network. EIN has the ultimate objective of providing convenient and practical access to all hardware and software located on the campuses of the EDUCOM community. A second program, Practice-Oriented Information System Experiment (POISE), seeks to apply the benefits of computer technology, electronic distribution, and information science to the problems of the cross- or multi-disciplines. The POISE concept implies a need among those users of information who work in areas requiring knowledge of, and from, several disciplines. POISE hopes to make possible the convenient transfer of abstracted, machine-readable bibliographic material from discipline-oriented files into a variety of practice-oriented ones.

The third major program of EDUCOM will coordinate the creation of a new type of educational service organization—the community learning center. Through the application of virtually all facets of educational technology, the resources of the EDUCOM institutional members will be brought to bear on communities with learning needs. Personal education programs will be offered to those whose formal education has been interrupted by lack of opportunities and to those with higher education backgrounds who wish to remain current or even to change career directions.

The EDUCOM concepts–interinstitutional communications and sharing of resources among colleges and universities via telecommunications systems–would seem to be an avenue with much potential for the teacher education profession. If teacher education institutions were to form their own consortium–sharing instructional resources via a telecommunications network and jointly conducting inservice training programs for teachers–much time and money could be conserved and duplication of effort and facilities could be avoided. The profession would be wise to consider such a concept in its plans for tomorrow.

## EMERGING RESOURCES IN TELECOMMUNICATIONS

### *The President's Task Force on Communications Policy*

In August, 1967, President Lyndon B. Johnson announced the appointment of a Task Force on Communications Policy and charged it with making the most comprehensive examination of U.S. communications policy ever undertaken. Since the education community has a substantial interest in educational and instructional television, computer-assisted instruction, and other electronic media, it is important that educators be familiar with the work of the Task Force, for policy in the field of communications can affect the future of education.

Some of the questions included in the President's charge to the Task Force are as follows:

> Are we making the best use of the electro-magnetic frequency spectrum?
>
> How soon will a domestic satellite system be economically feasible?
>
> Should a domestic satellite system be general purpose or specialized, and should there be more than one system? (11)

The President focused attention on the implications of new communications means for the field of education:

> Schools in all lands can be connected by television . . . so that the children of each nation can see and hear their contemporaries throughout the world.
>
> The world community of scholars can be brought together across great distances for face-to-face discussions via satellite.

> The art, culture, history, literature, and medical science of all nations can be transmitted by satellites to every nation. (11)

As this volume goes to press, the recommendations of the Task Force have not yet been made public. When the report becomes available, it should contain significant materials for educators. The major areas with which the Task Force is concerned have serious implications for the education community.

### *Networks for Knowledge* [5]

An amendment to the Higher Education Act of 1965, Networks for Knowledge is a new Title XIII program that promises to generate much activity in educational telecommunications. President Johnson signed the bill, but the Congress did not act on the appropriation bill. Further Congressional action is not expected before July, 1969. Authorized funds include $340,000 for fiscal 1969, $4 million for 1970, and $15 million for 1971.

At this juncture when multi-media systems development seems to be more and more certainly the shape of the future, the Networks for Knowledge legislation would give educators both the stimulus and the means for interrelating a large number of media thus far left to develop in isolation and even in competition with one another. The goal of the legislation is specifically the stimulation to share "educational and related resources" among colleges and universities, both public and private.

The legislation would be administered by the U.S. Commissioner of Education through project grants for all or part of the cost of planning, developing, or carrying out cooperative arrangements that would enable colleges and universities to share "to an optional extent" their "technical and other educational and administrative facilities and resources while maintaining their respective institutional identities." It is the intent of the legislation "to test and demonstrate the effectiveness and efficiency of a variety of such arrangements, preferably on a multi-institutional basis." The "effectiveness" and "efficiency" goals of the legislation would suggest that the particular mix of media and their uses within the system ought to evolve naturally in ways that meet the real needs and priorities of the cooperating agencies and students. During a given hour, the same facility might be used to transmit a single television program or thousands of computer and library exchanges. There might be a constantly varying proportion of media involved—radio, television, telephone, dataphone, teletypewriter, facsimile, electro-writer, and computer terminals.

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[5] Material for this section has been extracted from "Networks for Knowledge," by John W. Meaney. *Audiovisual Instruction,* December 1968.

The equipment specified in the Networks for Knowledge Act for "establishment and joint operation" includes closed-circuit television and computer facilities. It does not include funding of "electronic transmission terminals", costs of operating administrative or student computer terminals, or costs of using central computer facilities. The legislation is clearly intended to support only interinstitutional applications costs of computers, including planning, programing, administration, and line-access.

The wording of the Networks for Knowledge act implies that hardware is much less important than the planning by which it is put together and the planning or production of the software that is to be exchanged. Hardware is easy and fast to arrange, but it is mostly irrelevant until the programs are adequately planned and produced.

The Networks for Knowledge act is an extension of many of the things that American education has already done with media, and it promotes the beginning of land-based regional networks that would occupy an important midposition between local materials centers and the domestic distribution satellites of the future. Local centers would than have the change to concentrate on individualizing instruction by transferring much of the storage and retrieval function to regional centers. Such regional land-based centers, in turn, may expect to acquire national resources and achieve flexibility by integration with the distribution capacity of satellites. In fact, it may well be that land-based telecommunications networks will become essential preconditions for the effective utilization of distribution satellites.

## *HARDWARE, SOFTWARE: STATE OF THE ART*

Hardware and software are interdependent; together they form a teaching system that can function to its fullest capacity only when both components have reached comparable levels of development. Without the software, the hardware—while decorative—is educationally nonfunctional and intellectually unproductive. The best instructional videotape is useless unless proper television equipment is available. Correspondingly, the most sophisticated computer network is wasted unless programs have been developed for it.

A new specialization needs to emerge among educators. Either personnel from the communications field must learn to produce the kind of software that educators want and need, or educators must learn the technical aspects of production in order to produce their own software. Probably the best solution to the problem would be for educators and technical experts to work together in the production of software that will match the hardward in quality.

While there is, of course, a fair amount of commercially produced software, and while many institutions use locally-produced instructional materials, the supply does not keep up with the demand, and the software market is still essentially barren.

Indiana University has established various national services to help relieve the problem of software shortage. The National Center for School and College Television (NCSCT) and the Educational Television Stations Program Service (ETS/PS) were established in 1965 at the University under sponsorship of the Indiana Univeristy Foundation, NCSCT is the center for in-school (ITV) program material, while ETS/PS distributes programs to educational television stations throughout the country. A third program service has also been made available for national distribution through the Indiana University Audio-Visual Department. NET-Film Service, which transfers selected NET programs to film, makes its program material available to schools and civic and private organizations that are looking for program enrichment and resource materials.

NCSCT provides not only instructional television materials of the highest quality in content, design, and structure but also acts as a central source of knowledge and information about television in education. To supply materials, the Center uses three methods: existing materials with national utility are directly acquired; certain promising materials are revised for widespread use; and new materials are being developed.

Indiana University's NCSCT, ETS/PS, and NET-Film Service, combined with the stateside telecommunications system now in operation, make a unique combination of modern technology and efficient utilization. Hardware and software complement each other to provide educational opportunities for the entire state. (8, p. 54)

## PLANNING AND USING INSTRUCTIONAL MATERIALS AS GUIDES FOR LEARNING TASKS

Returning to the introductory theme of this chapter, *perspective*, it has been the intention to submit several points of view:

- Various applications of television-related media are serving as powerful aids to teacher education programs.
- Reasons exist for believing that a higher level of teacher competency can be developed through the use of media for preservice and inservice situations.

- Newest developments in electronic hardware point to relatively early availability of devices and systems which are not yet generally known.
- Newest developments of techniques to produce programed materials for electronic hardware are not widely known or used.
- The electronic capability available to specialists in educational technology offers both opportunities and responsibilities to teachers.

To cope with the dilemma implied in some of the above points, more instructional materials are needed. It is well to remember a statement often heard, "The supply of hardware exceeds that of software." Educators must make choices in the selection of materials and related media to accomplish the required learning tasks of students. In other words, "It's the program that counts."

An example of a desirable approach could be to design, use, and validate student behavioral objectives. An analysis should be made of the learning task in regard to the student's change in behavior resulting from the learning experience. The learning task consists of one or more general objectives of a specific subject area. Each general objective should contain numerous behavioral objectives which students are to perform. Each behavioral objective consists of acceptable learning behaviors appropriate for various student competency levels. Through numerous learning behaviors the student begins to experience the intended learning task.

Emphasis should be placed on the analysis of student needs, the selection of learning aids, and the synthesis of various types of media utilization techniques which can be adapted by teachers into an effective teaching system. A bank of behavioral objectives should be made available for teachers. All teachers should have the experience of writing good behavioral objectives. However, all teachers are not textbook writers, nor need they be good writers of original behavioral objectives.

## TERMINOLOGY USED IN PLANNING INSTRUCTIONAL MATERIALS

### *Diagnostic Evaluation Testing Is*:

Administered to define specific weaknesses and strengths in an individual's general knowledge and/or learning skills. Results of such tests are contributing factors for the teacher in determining the entrance level of the learner. It is given to a learner prior to the new learning experience.

*Pre-Evaluation Testing Is*:

Administered to determine an individual's competence of specific knowledge in an instructional subject area prior to beginning a new learning experience in that area. The pre-evaluation test is composed of mostly criterion questions directly related to the content of the new learning experience. The diagnostic evaluation test usually is not as specific in content as the pre-test and is not necessarily testing for knowledge to be obtained from new experiences.

*Criterion Test Is*:

Administered to compare the level of learning (achievement) before and after the new learning experience. It is composed only of questions directly related to content of the new learning experience. These questions are called *criterion questions.* The criterion test and the pre-test are similar and are given before the new learning experience.

*Post-Evaluation Testing Is*:

Administered to compare the level of learning (achievement). It is composed of the identical criterion questions (placed in random order) previously given to the learner on the criterion test or pre-test. This test is given after the new learning experience. The resultant scores of the pre-test and the post-test validate the instructional effectiveness of the new learning experience.

## A PROCEDURE FOR PLANNING INSTRUCTIONAL MATERIALS

Each procedure should be accomplished by the teacher in the following sequence.

*Procedure 1.* Determine upon or accept a *learning task* to be developed into a series of learning experiences. The teacher, with assistance from curriculum and instructional material specialists, should carefully analyze the behavior needed to complete each required learning task. Try to visualize the behavior by writing descriptive verbs of the behavior expected of students.

*Procedure 2.* Determine the need for written and/or oral diagnostic evaluations. Conduct this evaluation as part of the pre-evaluation test. Write and give the pre-test. Assess student competency levels in relation to the learning task of Procedure 1. Determine whether the student's competency level is likely to be *greatly* improved by the specific learning task. If not, a different learning task is required.

*Procedure 3.* State the learner's level of acceptable performance for the primary learning task. The teacher must know the student's capabilities. For example, a student must obtain an accuracy of 80% on a true-false examination.

*Procedure 4.* State in writing on index cards the required learning task in measurable or observable learning behaviors. Each learning behavior (inappropriately called behavioral objectives) should include the following elements:

(a) Who is to behave differently?
(b) How are they to behave?
(c) What student performance must take place to produce this learning behavior?
(d) Who initiates the action?
(e) What is an acceptable response?
(f) What restrictions or conditions of accomplishment are there on an acceptable response of the learner?

*Procedure 5.* Write each of the learning behaviors in the form of student responses (activities), using numerous instructional materials and methods of instruction. List the available instructional materials for each learning behavior.

*Procedure 6.* Specify areas of instruction which require visualization and/or audio materials to accomplish the *intended* level of learning. Check your list of available materials. Consider possibilities for production of new materials by students, teachers, or media specialists.

*Procedure 7.* Determine when each learning behavior is to be presented to the individual learner. This will indicate the interdependency relationship among several learning behaviors. Place all index cards in order and number in proper sequence. This will be the appropriate instructional sequence for that learning experience.

*Procedure 8.* Determine the media of presentation desirable for the specific subject area, level of instruction, type and quality of visuals, and specific problems of instruction for each learning behavior. Selection of media should be based on advantages of utilization, availability of required equipment, costs, and how they will be introduced and used during the learning experience. Obtain media preference of students through observations by the teacher and survey forms completed by students.

*Procedure 9.* Produce the new or revised instructional materials, with technical *assistance* from audiovisual specialists. The teacher or student uses the instructional materials and techniques.

*Procedure 10.* Evaluate the instructional presentation (and materials) by giving the learner a post-test. Changes in competency levels can only be measured if both pre- and post-test are administered to each student.

*Procedure 11.* Compare results of post-test with those of diagnostic and/or pre-test to determine the student's gain in knowledge and/or skills obtained from the new learning behavior.

*Procedure 12.* Obtain other teacher opinions as to the effectiveness, advantages and shortcomings of the instructional materials used.

*Procedure 13.* Revise ineffective materials and techniques. Add new material and techniques when it appears they are needed.

*Procedure 14.* Re-test the revised materials by repeating procedures 10 through 13.

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# Chapter X

# A Partnership:
# The Teacher Education Center*

## THE TEACHER EDUCATION CENTER CONCEPT

Although the development and operation of teacher education centers in Maryland have been cooperative ventures among the various institutions involved, the programs have had unique aspects related to the roles of colleges and public schools. Several institutions have participated as partners in planning and conducting the preservice program for college students and the inservice program for supervising teachers.

### *Public School Participation*

Under usual circumstances, school systems view their role in staff development as being related to the inservice program for the faculty. Also, public schools often view the preparation of beginning professionals as a responsibility of colleges and universities. Although school systems have cooperated for many years in professional laboratory experiences conducted in the public schools, the leadership role in this enterprise is usually viewed as a college function.

In the teacher education center developed as a part of the Maryland Multi-State Teacher Education Project (M-STEP), increased emphasis was placed upon the role of the public school for the preservice program. An example of this kind of involvement occurred in the Steering Committee which included teachers, public school administrators, college personnel, and State Department of Education representatives.[1] This Committee planned the program and provided for continuous examination and adjustment of the center's activities. Through this vehicle it was possible for public school personnel to participate in planning and conducting certain aspects of the preservice teacher education program in a more meaningful way than had been previously possible.

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* By Herman E. Behling, Jr., Maryland Department of Education

[1] For details of organization and structure, the reader may wish to see the Maryland section of Chapter II, *Teacher Education in Transition,* Volume I.

The inservice program provided an opportunity for the public school staff to participate in another level of the teacher education program. In this situation, teachers, administrators, and State Department of Education personnel developed a proposal for inservice activities of teachers which was discussed with the college, adjusted, and implemented as an inservice program. Through this process, it was possible for public school personnel to participate in teacher education in a very meaningful way, and the public school planners included teachers and other local school building personnel.

### *College Involvement*

The teacher education center program makes it possible for the college to increase its role in the development and execution of the inservice program. Through discussions resulting from planning sessions, the college is able to explore with school building personnel certain aspects of teacher behavior and to propose activities for the modification of teacher behavior. Also, the college may present suggestions concerning experiences which might increase the effectiveness of supervising teachers as they guide the growth of college students.

The teacher education center coordinator, who serves as the college's continuing person directing the inservice program for teachers, is assisted in this process by a number of college faculty members who serve as consultants to the inservice program.

The coordinator and consultants have the responsibility for helping center personnel obtain the services of certain college faculty members who could serve as resource people as needs are identified in the local school building.

### *The Program for Student Teachers*

Professional laboratory experiences for student teachers, detailed later in this report, are characterized by a variety of activities, teaching models, and techniques based upon the individual needs of students.

Under ordinary circumstances, the individualization of student teaching experiences is accomplished as talented supervising teachers are able to meet the needs of student teachers and to program experiences designed to foster the student's professional growth. A distinguishing aspect of the teacher education center program for student teachers is the *planned* attempt to individualize the program based upon college students' strength and needs identified by the professional staff of the center. The team effort to plan and carry out many kinds of activities for, with, and by student teachers is an important reason for the success of this program.

### *Changing Roles in Teacher Education*

The center program utilizes college faculty members differently from the widespread practice of having college supervisors of student teaching travel hundreds of miles to visit one student two or three times a term. Rather, college resources are applied in a manner designed to provide continuous and effective supervision through the teacher education center coordinator and the resources available to him.

Also, the building principal is responsible for a faculty which is expected to participate in the leadership and execution of professional laboratory experiences for student teachers in a way which has not been expected of a Maryland faculty previously.

The student teacher's experiences are arranged in a new pattern which produces a unique program and requires teachers to direct their talents, singly and in teams, toward developing a new professional educator with a background of considerable experience. All these role changes foster a situation in which every participant is functioning differently from that expected of teachers and learners in traditional student teaching programs.

### *The New Position of Teacher Education Center Coordinator*

The leadership role for the teacher education program in the center is crucial. The school system and the college are actively involved in the program, and each is a partner in the leadership role; this cooperative effort is most visible in the person of the center coordinator. Consequently, the person who occupies this role will be a joint appointee, and the two institutions share equally in the selection and payment of the coordinator.

The Montgomery County Board of Education and the University of Maryland appointed their first joint appointee in teacher education in the summer of 1966, and the coordinator assumed her responsibilities at the Kemp Mill Elementary Teacher Education Center.

### *State Department of Education Involvement*

One of the major objectives of the Maryland M-STEP program was to involve the State Department of Education as a very active participant in the development and operation of the teacher education center program. The presence of a State Department coordinator made it possible to apply the talents and resources of the Department when they were most needed. The

Department not only contributed materially in ideas and resources, but it was able to gather data to support its other Department-sponsored projects in teacher education and student teaching.

Two outcomes were especially significant. Ideas gained from the Project helped in the development of a proposed State-financed legislative program in student teaching which included as one of its important aspects the concept that the State must assist local school units by paying one-half the salary of the Teacher Education Center Coordinator. The same legislative proposal also contained funds for inservice activities of supervising teachers, as a feature which grew out of the experiences gained at the center.

Through this active involvement State Department personnel have been better able to assist other school systems and colleges in Maryland as they have developed centers.

## A CENTER'S PROGRAM FOR STUDENT TEACHERS

The Center's program for student teachers has several distinguishing characteristics. The student teacher is assigned to the center, not to a supervising teacher. Emphasis is placed upon making it possible for a student teacher to be assigned to a center where he will receive a variety of experiences, not to one supervising teacher who might become very possessive of that student teacher. One objective of the center is to help the supervising teacher develop the attitude that the program is designed for the growth of the student, and each member of the teacher education center is to contribute in some way to that growth.

The teacher education center coordinator has the responsibility for directing the program and moves students from one experience to another as he and the faculty sense a need for the students to have a different kind of experience. With this kind of orientation, teachers find themselves involved in a program which is very demanding of their time and energy. When a student teacher becomes sufficiently competent to be responsible for a class activity and it is believed that the student has learned all he can from that experience, the student would be introduced to a new and different learning situation.

One of the underlying ideas of the teacher education center is that it is a place where professional educators are committed to the growth of prospective teachers; consequently, teachers are happy to be working with students. It is no secret in the field of education that some teachers are not overjoyed at the opportunity of working with student teachers.

### *Intensive Experience*

One of the objectives of student teaching is to help the student become committed to the growth of a group of boys and girls. To insure that this will be one of the anticipated outcomes of the program for student teachers in a teacher education center, the planners of this concept established the intensive experience. During this experience, a student spends a considerable amount of time over a period of weeks working with a single group of boys and girls.

### *Extensive Experience*

It is impossible to determine during student teaching the kinds of experiences which would best prepare a student for his first teaching assignment in the public schools because the exact nature of that assignment usually is not known. To provide the student with the kind of experience which would best meet that uncertain situation, extensive experiences are designed. Of shorter duration than the intensive experience, extensive experiences result from individual assignments to other teachers and classrooms as the students' developmental needs arise. Extensive experiences insure for the student a wide background of experience with boys and girls of many age groups and ability levels. They increase the range of growth processes beyond those normally found in student teaching.

### *Variety of Experiences*

The teacher education center program has as one of its major themes a variety of experiences for student teachers. By providing each student with many models of teaching, the student is able to begin selecting those skills and techniques which will help him develop his own style of teaching.

One fact about teaching which is obvious even to the most casual observer is that teaching styles of master teachers vary greatly. During the beginning years of a teacher's career, he experiments with many ideas and eventually develops his own style of teaching. Therefore, it seems wise to recognize this fact and help the student teacher work toward his style of teaching which is consistent with his personality and values.

### *Professional Laboratory Experiences in the Teacher Education Center*

One of the problems of educators in teacher education is the need to apply the concepts of individual differences in learning to teacher education programs. In the teacher education center no two student teaching experiences are the same, because the program is arranged individually by the teacher education center coordinator in conference with the other participating members of the center.

L. O. Andrews has said that during the student teaching experience it is possible for the student teacher to gain more observation experience than a classroom teacher acquires in 40 years of teaching. If we arrange the experience properly, it seems we can achieve Andrews' suggestion. It is possible for the student teacher to participate on a less intensive basis in classrooms in the building either on the same grade level or with different age groups.

The presence of coordinated growth opportunities constitutes a significant strength of the teacher education center. For student teachers who enroll in the center the program is characterized by multi-grade and multi-level observation and participation. Students are encouraged to observe and participate not only with the same age group with which they are working but also with other age groups. The program for student teachers is not guided by supervising teachers alone as is too often the case in the traditional non-center arrangement, but the experiences are also guided by the center coordinator, other public school personnel, and college faculty members.

### *Beginning the Experience*

Student teachers arrive in August when the teachers arrive. Especially in the beginning of the experience, student teachers need status, and if circumstances are arranged properly, a situation is developed where two teachers are guiding the growth of children—one leader being the student teacher and one, the supervising teacher. Although it is not possible to disguise the real situation from the children who know the master teacher, every attempt is made to give the student teacher as much status as possible.

During these first days of the school year before the children arrive, the college students participate in the regular faculty inservice education program and engage in orientation activities specifically designed for them. A seminar room in the center makes it possible for the coordinator to assemble student teachers for purposes of group discussion and problem solving. The coordinator can acquaint the students with the program which they will experience; and, in cooperation with the principal, she can orient them to the program for children, some characteristics of the school system, information about the community in which they find themselves, and the kinds of families and children with whom they will be working. When the children arrive, the student teacher assists, in these first days of the school year, to see how school actually begins and to help with little problems that may arise.

### *Increased Participation*

As the days go by, the student teaching program is characterized by greater and greater involvement of students in the program for children. The student teacher assists the supervising teacher in whatever way possible and is available as supervising teachers work with individuals and groups of children.

The student teacher should have the opportunity early in the program to work with individual children, to begin relating to them on a one-to-one basis, and to work with smaller groups of children.

For example, one especially rewarding situation for a student teacher grew out of the concern of several supervising teachers for the growth of a student. Four teachers of third-grade children, aware of their individual styles of teaching, the individual differences in their various classes, and their adaptation of their programs to the learners with whom they worked, saw value in helping the student teacher learn more about these situations. Therefore, although the student teacher was assigned to one teacher for an intensive experience, she spent some time with each of the other teachers on that grade level. This situation emphasizes again the commitment of the faculty to provide many experiences for student teachers to work with individuals and groups of children.

Students also need the opportunity of working with the total class as early as they are mature enough to assume that responsibility—with the supervising teacher being close at hand and helping when necessary. Achieving independence from the supervising teacher so that the student can assume full responsibility for class activities is also an important objective of the program.

### *Out-of-Class Activities*

Student teachers are encouraged to become involved in more activities than those which are related to classroom experiences. They should be active in community, school system, and university affairs; and they should understand the role of the professional educator in relationship to these various institutions.

P.T.A. activities in the school provide one opportunity for students to become better acquainted with families. Where possible, students go into the community and learn about life there. Home visits provide an opportunity to obtain revealing glimpses of the life of the child. It is also possible for student teachers to visit other community schools which are conducting interesting programs. In one situation, a nearby school had conducted a year-long curriculum study in math, and the student teachers spent some time with the people in that school learning about new math concepts and materials which the faculty had gathered to help them teach these ideas.

### *Curriculum Planning*

Curriculum planning is one of the significant roles of the teacher which needs to be a part of the student's experience. He simply attends grade level meetings to discuss the program for children or he participates actively, depending upon his ability.

To provide the opportunity for students to engage in meaningful curriculum development, students go in the winter with faculty members to the outdoor school to plan and arrange the experiences which children may have there in the spring.

### *Readiness of Student Teachers*

Some students come to student teaching with real strength and many previous experiences working with boys and girls. Other student teachers need more experience working with children as individuals. Therefore, if the student teacher is to be successful, experiences must be provided which will secure for the student the kind of background he needs.

The student might spend two weeks in the library or some other part of the center helping individual children and working with them on their individual problems. (This kind of program was especially successful for one student who found her first intensive experience on the verge of failure.) Since the teacher education center coordinator is able to terminate and initiate experiences as they are needed, he can place the student in a situation which provides better prospects for success. This program explores various aspects of readiness of student teachers, places them in situations where they can succeed, and removes the stigma sometimes attached when readiness is less than educators had expected.

### *Resource Personnel*

The coordinator and faculty involve other people in guiding the growth of student teachers. School system resource personnel, who give demonstration lessons to regular faculty members, assist the student teaching program. For example, a math resource teacher gave a demonstration lesson and after the lesson answered questions of the student teachers concerning various happenings in the lesson. Student teachers also call upon resource people to assist with field trips and other learning opportunities.

A resource which should not be overlooked is the student teacher himself, who can help the growth of the total group of student teachers. A library science student conducted a seminar to help other students learn how they might use the library with children and what resources are available to them.

### *Another View of Experiences*

The following is a summary of two student teachers' experiences. The first student teacher needed considerable experience with boys and girls, so much of her program was directed towards working with individuals and smaller groups of children.

Mary Ann. . . Intensive: Grade 4
Extensive: Grade 1
Observation K, 1, 2, 3, 6
Library
A-V: Tape Recorder
Opaque Projector
Principal-Teacher Conferences
Field Trips—Planetarium—6th Grade

The following is a list of experiences provided for a very mature student teacher who previously had had many kinds of experiences with boys and girls and was able to assume a wide variety of roles in student teaching:

Linda. . . . . Intensive: Grade 6
Extensive: Grade 2
Observation 2, 5, 6
Outdoor Education Program
Parent-Teacher Conferences
Music to all 6th Grades
A-V: Thermofax—Overhead projector
Administrative Offices
- Staff Development
- Testing
- Research
- Hostess to new student teachers
- Informal Reading Inventory

### *Other Teacher Education Students in the Center*

The center also provides an opportunity for college students to obtain professional laboratory experiences prior to student teaching. These laboratory students also engage in a variety of activities—reading to boys and girls, assisting individuals, or working with smaller groups of children, when the student is competent to do so.

One of the objectives of this program is to bring college resource people to the school. For example, the college instructor of teacher education juniors came to the center to meet with teachers and plan the program for students.

The student teachers also help the junior students to identify what it is like to be a student teacher and how to prepare for their student teaching experience.

## INSERVICE EXPERIENCES FOR SUPERVISING TEACHERS

A workshop experience coordinates many ideas related to the inservice development of supervising teachers. The following sections attempt to describe one such successful program which was given for graduate credit, tuition-free, on school time, at the center.

### *Workshop*

During the first year, the workshop was a program titled "The Supervision of Student Teaching." This year-long experience was designed to meet the needs of supervising teachers as identified by them and other members of the teacher education center staff. The following list of consultants and topics will identify their concerns and indicate how the workshop was organized to meet those needs.

Consultants for the first workshop included:

Dr. Paul Anderson of the University of Maryland, on *Team Teaching*

Dr. Herman E. Behling, Jr., of the Maryland State Department of Education, on *Conferencing with Student Teachers*

Dr. Louise Berman of the ASCD, on *Personalized Supervision*

Dr. Marie DeCarlo, Director of Area 8, Montgomery County Public Schools, on *Supervision*

Dr. Roy A. Edelfelt of TEPS, on *The Teacher and His School*

Dr. Walter J. Mars of AACTE, on *Analysis of Teaching*

Dr. Dorothy Peterson of Trenton State College, New Jersey, on *Classroom Management*

Dr. Kimball Wiles of the University of Florida, on *Supervision.*

In the beginning of the second year-long workshop, two consultants responded to the teachers' request for assistance in working with student teachers. Raymond Houghton of Rhode Island College spoke on the topic "The Role of the Teacher as a Change Agent in a Teacher Education Center," and L. O. Andrews was very successful in helping supervising teachers meet the problem of being leaders of student teachers.

The "Analysis of Teaching" was the major focus of the second workshop. Interaction analysis was a special interest which teachers and student teachers pursued as they worked together to gain background in the use of the Flanders-Amidon categories, and, after some proficiency had been achieved, a professional day was arranged when Edmund Amidon from Temple University helped teachers understand more of the uses and interpretations of interaction analysis. Donald Cruickshank discussed with teachers the use of simulation in teacher education, and Charles Galloway's discussion on nonverbal communication was well received by teachers. David Young from the University of Maryland served as continuing consultant and through micro-teaching, worked with teachers on technical skill in teaching.

These workshops have also made it possible for teachers to assemble in groups in a seminar situation and share their ideas concerning the program.

### *Released Time Activities*

Another aspect of the teacher education center inservice program for supervising teachers is released time for conferencing, planning, attending regional and national conferences, making interschool visits, and engaging in a variety of professional experiences not normally possible for public school teachers.

This opportunity for released time and to have what teachers believe is a manageable teaching load was received very enthusiastically by supervising teachers.

In a survey conducted in the teacher education center to determine teacher attitudes toward a list of benefits they have received or might have received, teachers cited released time as the most highly valued item. When this survey was repeated at a much later time, it was learned that released time was still the most valued item. An interesting sidelight to this situation was that the introduction of released time into the center program appeared to have the effect of reducing sick leave taken by teachers.

Released time also makes it possible for teachers to engage in certain other professional activities. For example, a small faculty group examined the significant aspects of their program as preparation for making their views known at a regional conference. During a two-year period in one center every supervising teacher attended a regional or national conference on released time. Teachers travelled as far as South Carolina, Utah, and California.

### *Other Aspects of Inservice*

Professional growth opportunities for supervising teachers have certain aspects identified by supervising teachers themselves as providing strength to the program. Teachers believe the close association with university and state department personnel helps them in their program.

They also value the opportunity to have educational innovators and new ideas brought to their school where they may interact freely with these people and their ideas. Released time makes many professional opportunities available to the faculty of this center, not the least of which is time for conferencing. Teachers find value in the opportunity to conduct, on school time, three-way conferences which include the coordinator and the student teacher.

One of the needs of teacher education centers is to keep the lines of communication open and to provide constant discourse about the program and its progress. A coordinating committee involving the principal, the coordinator, and a faculty representative or two is useful for this purpose.

The inservice program should also be designed to make provision for individual differences in learning rates and preferences of supervising teachers. Since one of the underlying concepts of the center is that every teacher should contribute something to the teacher education center program, there may be some concern about how this can be accomplished. An example may help. One very competent teacher in a center decided she did not want to be a supervising teacher for students. She did indicate, however, that she would work with a college junior, who came one-half day a week. After this experience, which proved successful for both the junior and the teacher, she indicated she would try working with a student teacher the following term. She was very successful and has continued to be an effective supervising teacher since that time. Thus, the program can be individualized for inservice teachers as well as for students.

## THE TEACHER EDUCATION CENTER COORDINATOR

The coordinator represents both the college and the school system and has major responsibility for both the preservice and inservice teacher education programs. The activities which he arranges are best explained by his attempts to individualize the program for both students and teachers.

He may not only arrange these growth opportunities but also meet with these people individually, in smaller groups, or in large groups. It is also possible for the center coordinator to combine the group of college juniors and the student teachers if he feels a good experience will result.

Seminars are arranged by the coordinator in the building at regular times based upon the continuing program and immediate problems perceived by the coordinator and the supervising teachers.

Another advantage of the teacher education center coordinator's presence in the building is that conferencing with any of the participants in the center is more easily arranged than in the usual student teaching situation. Also, these conferences can be much more meaningful because the coordinator is familiar with the program for children, knows the teachers in the building, and is constantly with the student teachers; therefore, he has a background of information which makes it possible to hold more meaningful conferences than might otherwise be possible.

The program in the center may represent a number of college programs. That is, there may be students there from the library science program, the physical education program, or the early childhood education program; it is not just one college program but a number of programs led by one coordinator.

## A LOOK TO THE FUTURE

The four years devoted to the development and implementation of the teacher education center concept in Maryland have produced one of the most promising innovations in teacher education in this State. It has also pointed to some needs for further activity.

One of these relates to the role of the principal. Educators have known for a long time that the principal of the school is a key person in providing an effective program for student teachers. It is essential for this person to maintain good staff morale and enthusiasm for teacher education in the public schools. Certainly this role has been emphasized in teacher education centers, and educators need to devise ways of ensuring this good result.

Attention needs to be given to the role of the center coordinator and the qualifications needed by this person. The coordinator is expected to be competent to work effectively in the school program for children. She is also expected to possess high level skill in supervising student teachers and be able to direct faculty inservice development.

Programs specifically designed to provide experiences which will produce competent teacher educators for centers are needed. This approach is more enlightened than the assumption that competent persons can be "found."

A third concern of the center is financing of the program. Some features of the program have really cost very little money; one example of this is released time which is so highly valued by the teachers. An examination of the records indicates that the number of days of released time provided in one program is approximately the same as the decrease in sick leave taken by the faculty during the year.

The teacher education center coordinator's salary is divided equally between the University and the school system. If the center program is to be moved into more schools and school systems, attention must be given to the source of funds which will provide the half salary to be paid by the school system. Obviously, some school systems have rather tight budgets and are unable to contribute significant amounts to teacher education. One source of assistance would be a State-financed program in student teaching.

A fourth area of need relates to recognition of the services of the supervising teacher. Teacher education center teachers are required to provide a very high level of competence—higher than that normally expected of classroom teachers. Appropriate methods of recognizing this competence and service must be found.

### *Research*

A facet of the program which is still developing is research initiated to gather objective information concerning major ideas of the teacher education center. Data concerning the program and experiences of student teachers in the center will be compared with experiences in those situations where students work with one supervising teacher during the entire student teaching period. This project should obtain objective information which will indicate whether student teachers actually are developing toward their own styles of teaching or are imitating the supervising teacher and whether they are having more opportunities to use a variety of techniques and aids than students working with one supervising teacher. Certain preliminary information indicates that the center program will make it possible for student teachers to feel more secure as they prepare for their first year of teaching; it will also be possible for them to adapt and be flexible in many kinds of situations which cannot be precise before they move into the first year of teaching.

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The program of the teacher education center is one about which Maryland educators are very enthusiastic.

# Chapter XI

# Evolving Characteristics of Quality Teaching: Teacher Education Centers, Team Teaching, Individualized Teaching

TOPICS

The Student Teacher Center Project
The Analysis of Classroom Interaction
Team Teaching and Teacher Preparation at Weber State College
A Proposal for Continuous Study and Evaluation of the Elementary
    Teaching Internship Program (E-TIP) at Weber State College
A Proposal for Continuous Study and Evaluation of the Secondary Teaching
    Internship Program (S-TIP) at Weber State College
Individualized Teaching in a Group Setting
A Diagnostic System for Evaluation of Teaching Performance

## THE STUDENT TEACHER CENTER PROJECT AT THE UNIVERSITY OF UTAH*

Edwin A. Read

The establishment of student teaching centers at the University of Utah grew out of cooperative activities which emerged in 1962 between the organizations of National Commission of Teacher Education and Professional Standards and National Council for Accreditation of Teacher

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*Utah State Board of Education, T. H. Bell, Superintendent, *Report of Utah Activities, Multi-State Teacher Education Project* (Salt Lake City: Division of Teacher Personnel, 1968) Appendix C.

Education (regional and state) to improve teacher education. On December 29, 1962, an Advisory Committee of 14 members – 11 from the University of Utah, two from the public school system, and one from the State TEPS Committee–was proposed to study "the broad process of teacher education" and to make recommendations for cooperative action between school districts and the University of Utah which would lead to the upgrading of public education in the state of Utah.

On December 13, 1963, a subcommittee was organized and charged with the responsibility of developing a proposal for cooperative action in the solution of persistent education problems which remained unsolved for want of effective avenues of communication among responsible and influential persons in the State College of Education, academic departments in the University of Utah, local school systems, and the Utah State Board of Education. Under able leadership, this new subcommittee was soon set into motion, and on February 6, 1964, the idea of establishing "teaching centers" was first proposed. These centers were originally conceived of as linkages through which genuine partnerships could be effected among those responsible agencies engaged in the educational enterprise. The notion was developed that such a link might be built around the student teaching experience, thinking of that as a half-way point between the College – which gives the preservice preparation of teachers – and the schools – which accept them and put them to work. As this notion was explored more fully, the following conclusions were reached:

- The establishment of student teaching centers would require the formation of a genuine partnership through which the public school people involved would have a real impact on the teacher preparation program offered by the University, and the University people involved would have a real impact upon the public school program.

- The personnel involved in this linkage point would need to be people interested in this function, having open minds and the capacity for developing and exploring ways of improving both programs.

- The centers should probably not become innovative experimental schools, although they should be schools on the forefront of improved educational practice.

- The number of such student teaching centers should probably be large enough to avoid an undue concentration of this kind of function in one school thus making it unduly conspicuous in a school system.

- School districts, other than those immediately involved at the beginning, should be potential future participants.

The dialogue within the subcommittee continued for several months with discussion tending to focus on the subject of teacher preparation, both preservice and inservice. The need to establish a vehicle for communication and cooperation between the public schools and the teacher-training institutions became increasingly clear. Throughout these deliberations, the student teaching center emerged time and time again as the most promising vehicle for the satisfaction of this need.

It was on October 23, 1964, that the subcommittee tendered its first report to its parent body, the Advisory Council on Teacher Education. In this report, it recommended the establishment of student teaching centers which would serve as linkages between public schools, the State College of Education, and the State Board of Education in the common enterprise of training qualified teachers. In its report, the subcommittee proposed an organization for the Centers, comprising an administrative council, student teaching center faculty and council, and three subcommittees to deal with matters relating to: (1) management of student teachers, (2) curriculm for teacher education, and (3) curriculm for public schools.. All components of this organization were to serve advisory functions with direct channels of communication being open to the University, the public schools, and the State Board of Education.

This report of the subcommittee was approved by the Advisory Committee on Teacher Education on October 23, 1964, and by the faculty of the State College of Education of November 30, 1964.

The first organizational component of the approved Student Teaching Center Project, the Administrative Council, was called into action on January 21, 1965. Much work still remains to be done in establishing student teaching centers, and this work has to occupy the time of the Administrative Council for an entire school year. Among the accomplishments of that year were the following:

- Support for the Student Teaching Center Project was formally obtained form the Granite and Salt Lake boards of education.

- The Salt Lake City Board approved a salary schedule which provided extra incentive for teachers chosen to serve in the Centers.

- Several public schools in each district were identified as Centers to go into operation the following school year.

- College students were identified who would be assigned to the first designated Centers when school opened in the fall of 1966.

- Cooperative procedures were established which called for summer planning meetings between Center principals and College student teaching supervisors; and September meetings between supervisors, principals, center teachers, and student teachers.

- Roles of the various participants in the Center Project were defined, and the channels of communication were clarified.

- A concise definition for a student teaching center was formulated, and the characteristics of such a school were identified.

The Student Teaching Center was defined as a public school (elementary or secondary) which specializes in providing clinical experiences for the student teacher. It is also a meeting ground where public schools and college programs are examined and brought into harmony in a concerted effort to strengthen teacher education.

A Student Teaching Center, when fully functional, was seen as having the following characteristics:

- A total school staff selected on the basis of their qualifications for and interest in working with student teachers.

- Enough student teachers in a school to insure efficiency in terms of the involvement of most staff members, the time of the college supervisor, and the student teacher ratio in seminars and methods classes.

- Student seminars which relate directly to the activities of the student teachers and which involve the cooperative effects of Center teachers and University professors from the College of Education and the academic departments.

- Faculty seminars which serve as forums where ideas are exchanged between University and public school personnel and where coordination of programs is achieved.

- Materials, equipment, and facilities essential to superior teaching.

When the public schools opened in the fall of 1966, nine student teaching centers went into operation—six elementary and three secondary. Throughout that academic year, the Administrative Committee met regularly in order to keep informed on the progress being made in the Centers and in order to assist in solving problems as they arose. Recognizing the importance of evaluation, it invited periodic oral reports from college supervisors and from participating students, teachers, and principals. In most instances, the reactions of the later groups were obtained during visits to the Centers made by members of the Administrative Council. In addition, a formal doctoral dissertation was submitted by the Director of Field Experiences following a year of investigation in the student teaching centers. The findings of all these evaluative efforts were encouraging enough to cause the Advisory Committee to make a unanimous recommendation that the project be extended into a second year, the year 1967-68.

## THE ANALYSIS OF CLASSROOM INTERACTION*

For the past four years the Department of Secondary Education at Utah State University has been in the process of revising its preservice teacher education program. One of the first steps taken was a pilot program in social studies education. This program combined the special methods in social studies, the general secondary education methods course and student teaching into a two-quarter sequence utilizing a block time approach. Also incorporated in this block program were the uses of programmed instruction and team teaching.

A second modification of the preservice program which grew out of the block program in social studies education was a move to a full-time student teaching program (full-time, full quarter) and incorporating a problems seminar. All secondary education student teachers are now required to allocate one full quarter during their senior year for student teaching accompanied by the problems seminar.

A third modification now in process is the revision of the introduction to education and principles of secondary education courses. The emphasis in these two courses is expected to be more on "what teaching is" and "the act of teaching." It is anticipated that various observational category systems such as interaction analysis (Ned A. Flanders) will become part of this new program.

In order to complement these institutional changes and also to provide materials for other universities and state departments of public instruction, Utah State University proposed a project in collaboration with M-STEP of which Utah is a member. The project had the following objectives:

- To produce a set of eight 20-minute video tapes of secondary school classes in the broad fields of English, mathematics, science, and social

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*Ibid.* Appendix D.

studies, which show examples of direct and indirect teacher influence as defined by Ned A. Flanders in his Interaction Analysis Systems.[1]

- To make these eight tapes available for reproduction by Utah M-STEP and by faculty members desiring to use the tapes in the new problems seminar accompanying student teaching and in the new combined principles of secondary education and introduction to education courses at Utah State University.

When funded during the summer of 1967, the Department of Secondary Education began implementation of the project. Codirectors are Dr. Ross R. Allen and Dr. John D. Haas, both associate professors of secondary education.

The first problem was the acquisition of equipment. Since the budget from M-STEP was pitifully small, it was combined with additional capital outlay funds from the USU College of Education and federal funds in an institutional assistance grant supporting USU's Experienced Teacher Fellowship Program in the social sciences. The combined funds made it possible to purchase a one-inch videotape system. The basic components of this system are: (1) a VR-6000 and a VR-5000 video tape recorder (Ampex); (2) three Concord video cameras with view finders; (3) two Sony nine-inch monitors; (4) a variety of lavalier, desk-tape, and suspension microphones, (5) one video mixer and one audio mixer; (6) miscellaneous equipment such as tripods for mounting the cameras, plugs, jacks, and cords, lights and light stands, etc.

In order to house the system the general administration at USU provided two classrooms which were subsequently modified into two videotape studios connected by a control room. Considering the minimal support from M-STEP (approximately $2,500) the codirectors were amazed at the amount of institutional support given to this project as well as to the many other programs for which videotaping would be available.

Acquiring and providing housing for the system took roughly six months. By early spring of 1968 we had experimented sufficiently with the videotape system so that we were ready to begin producing the taped episodes. The codirectors felt that the first tape produced, in addition to including two episodes, one an example of direct and the other of indirect teacher influence, should also include a brief introduction to interaction analysis, á la Flanders. By early summer, 1968, the first tape in the series was completed. It is approximately twenty-five minutes in playing time and includes a ten-minute introduction to interaction analysis, two five-minute episodes from secondary school social studies classrooms, and five minutes of analysis of the tally and matrix sheets for each of the episodes.

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[1] Ned A. Flanders, *Teacher Influence, Pupil Attitudes, and Achievement*, Cooperative Research Monograph No. 12, U.S. Department of Health, Education and Welfare, Office of Education, Washington D.C., U.S. Government Printing Office, 1965.

## TEAM TEACHING AND TEACHER PREPARATION AT WEBER STATE COLLEGE*

W. Blair Low

### *Individual Differences*

The basis for all decisions, whether by administrators or teachers, must be what is best for the individual child, who serves as the hub for the purpose in education.

Team teaching is often thought of as a method of teaching or an organization. Yet from its humble beginning in Dr. Lloyd Trump's large group, small group, and independent study process, team teaching has emerged more clearly as a fundamental principle of education, a means of providing greater individualization of instruction.

As one considers team teaching as a tool rather than a method of teaching, the opportunity to meet the individual differences of children becomes more possible. With the development of a trend toward more responsibility being placed upon the learners, the large group may well become obsolete as it was originally conceived and used in team teaching. As instruction becomes more individualized, the professional person must be made readily available for teacher-student interaction, dialogue, and planned small group seminars to accomplish this. Yet only as the professional staff can organize itself to function as a team with a differentiated role for each of its members can this monumental task of individualization be even approached, let alone achieved.

If educational opportunities are made on an individual basis, then grade structure must disappear. The human variable of individual differences demands alternatives, and we must know and recognize the fact that each learner is an individual with individual needs, interests, and aspirations. Of our current twenty million students there are no two alike, and this demands a radical change in our educational structure.

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*Utah State Board of Education, T.H. Bell, Superintendent, *Report of Utah Activities, Multi-State Teacher Education Project* (Salt Lake City: Division of Teacher Personnel, 1968). Appendix E.

### *Teacher Professionalization*

Team teaching has permitted teachers to specialize and improve their professional competencies within their area of specialization rather than to require them to attempt to treat a broad spectrum of educational opportunities and obligations. Because of this professionalization of the teacher and the freedom of developing his areas of specialization, the curriculum itself grows and becomes differentiated to further meet the individual needs as expressed or exhibited by students.

### *Teacher Preparation*

To date, a few new teachers have had preservice experience in preparation for team teaching, and too few administrators are able to judge adequately whether an applicant for a team position is intellectually, psychologically, philosophically compatible with other team members. A degree of mutual respect must exist for the capabilities of each team member. His individual differences must be accommodated as they relate to the teaching profession. The college student should have sufficient depth in a variety of teaching experiences that will enable him to adequately evaluate himself and make those judgments that will place him in the type of teaching environment in which he will be most comfortable. A teacher who finds colleague criticism distasteful may be uncomfortable when his teaching performance is placed on daily display. A teacher who finds himself lacking in flexibility probably would prefer to remain in the self-contained classroom and not serve as a member of a team. Those individuals who seek the evaluation of a competent colleague, who strive to strengthen their teaching, and who see the benefits of this help may well seek out the experiences provided by nongradedness and team teaching.

At Weber State College it has been customary in secondary education to split the eleven-week student teaching experience into a junior high school and senior high school experience. As student teaching experiences are being assessed, it appears that a longer experience at only one level would probably be more advantageous should the student be assigned to a team. Five-and-one-half weeks appears to be too short a period for an adequate team experience. The number of students which a student teacher must become acquainted with and incorporate into his planning is greatly increased, consequently requiring a longer period of time for him to function adequately as a teacher and carry out his teaching responsibilities to the students and the team. He must also isolate his own talents and through adequate planning make his greatest possible contribution to the teaching experience, and this requires time.

Along with team teaching, flexible scheduling may often exist, if not within the entire school certainly within the team itself, and through this flexibility the problems of teaming for the beginner may be further complicated. The use of structured time and unstructured time of students becomes paramount for a student teacher to consider adequately in his planning and preparation for teaching. Until the preparation of the student teacher becomes adequate to equip him for the team teaching experience, it would appear that a longer exposure to team teaching assignments is necessary.

### *Weber County Schools*

For the past five years the writer has had the opportunity of working closely with the Weber County School District, Ogden, Utah. During this period of time, three video tapes[2] in which a number of the elements of team teaching are depicted were developed through a grant from the Multi-State Teacher Education Project (M-STEP). Also during the same period the college and the school district have worked closely in an effort to provide adequate professional laboratory experiences for students certifying in teacher education. This district, consisting of 22 elementary schools, 6 junior high schools, and 3 senior high schools, has made a firm commitment to team teaching. Many of their buildings have been redesigned or new ones built to accommodate the flexible programs required by team teaching. As a result of a federal grant, an Exemplary Center for Team Teaching has been established. Because of these experiences, educators from across the country have sought out Weber State College graduates.

### *Goals of Team Teaching*

So that the reader may realize that team teaching usually requires a different approach to teacher preparation, the goals of team teaching are listed below. It is not to be construed that this list is complete nor that it is germane only to team teaching.

- Efficient utilization of the staff in regard to interests and competencies of each member.
- Professionalization of the staff or differentiation of responsibilities according to professional training and competencies.
- Proper utilization of the nonprofessional staff.
- Individualization of instruction and a responsibility and commitment for learning that rests with the pupil.

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[2] *Team Teaching in the Secondary Schools.* (One- or two-inch video tape–27 minutes).
*Teaming for Learning at the Elementary Level.* (One- or two-inch video tape or 8mm sound film loop–16 minutes).
*Creative Processes in the Elementary School.* (One- or two-inch video tape–or 8mm sound film loop–20 minutes).

- Cooperation in planning.
- Cooperation in the steps of evaluating, presenting, and organizing.
- Creation of an environment open to change.
- Alteration of curriculum for more flexibility to meet individual needs of students.
- Utilization of more alternatives to find the solutions to educational problems for a distinct group of students.

The organization of a school also allocates rooms and space in a different way so that large groups, small groups, independent study, and teacher conferences become feasible. The allocation of instructional materials is directly affected in providing a greater use of educational media. From these goals, one can see that the preparation of teachers requires flexibility.

In the years ahead, it becomes even more imperative to give consideration to alternatives of teacher preparation programs. Only as these steps are taken can the profession hope to gain sufficient insight into the adequate preparation of its graduates.

## A PROPOSAL FOR CONTINUOUS STUDY AND EVALUATION OF THE ELEMENTARY TEACHING INTERNSHIP PROGRAM (E-TIP) AT WEBER STATE COLLEGE*

### *The Elementary Teaching Internship Program (E-TIP)*

The basic philosophy of E-TIP is to provide interns with sound and effective supervisory assistance throughout their first year of teaching, to increase the depth and breadth of experience in the school curriculum and with elementary pupils, to offer more support in coping with the common problems faced by the first-year teacher, and to make provision for deeper insight into the attitudes and activities required of a professional person.

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*Weber State College, Ogden, Utah (M.S.)

E-TIP is basically designed for two major reasons: (1) improving the preparation of students receiving elementary teaching certificates, thus improving teaching during the first year's experience and reducing the attrition ratio among new teachers (E-TIP is seen as a service to the school district, the student in training, and the teaching profession) and (2) improving instruction in the elementary schools by decreasing the student ratio and thereby increasing the opportunity for individualization of instruction and program flexibility.

It is the intent that under this proposal an evaluation of E-TIP will be made throughout the year. Approval for any innovations in the program will be requested for each subsequent year for a three-year period, at which time and evaluation report will be made concerning the program. An interim report will be filed yearly.

### *Districts to Participate*

The intern program for the next three years will be confined to Davis, Ogden, and Weber County school districts. Only upon prior approval from the State Department will it be extended beyond these districts.

### *Definitions*

E-TIP: Elementary Teaching Internship Program as developed within the framework of this proposal.

Internship: A full or one-half year's experience in the public school with related seminar and training experiences.

Intern: A Weber State College student qualifying for E-TIP.

Internship-Station: A cluster or set of classrooms located in one area of the building in which the interns and cooperating E-TIP teacher(s) are assigned.

Cooperating E-TIP teacher(s): The experienced professional teacher(s) selected to work with and supervise the team of interns of an internship-station.

### *Qualifications for E-TIP Candidates*

The candidates must:

- Have been admitted to the Weber State College Teacher Education program.

- Have an overall GPA of 2.5.
- Present recommendations as evidence of his moral, scholastic, and personal qualifications for the assignment from a faculty member(s) in his area(s) of concentration, and from two members of the education faculty who have had the candidate in their classes.
- Present evidence of his ability to complete the requirements for graduation and certification by the end of the summer quarter subsequent to his internship experience.
- Have completed at least two education classes at the conclusion of the fall quarter in which the application in submitted.
- Agree that he will direct his full energies to the internship.

The candidate should also show a willingness to:

- Conduct himself as a responsible member of the school faculty, both from the standpoint of deportment and in fulfilling his obligations to his fellow teachers.
- Attend the required campus seminars and participate in other professional and nonprofessional teaching activities as requested by the employing district or college supervisor.
- Attend summer planning and workshop sessions.

### *Selection of Interns*

The final selection of candidates for E-TIP will be made by the Elementary Student Teaching Committee. The degree to which the above-mentioned qualifications are met will constitute the basis of the selection. Public school personnel (principal and the person in charge of employment, etc.) will select the candidates for their school from the group of approved candidates.

### *Grade Levels for Internship*

Basically the internships will be determined by needs of the participating school districts and the number of acceptable classroom units as determined jointly by the college and public school personnel. But in any event for the ensuing school year the number shall not exceed 40 interns. Any increase in this number of interns will require prior approval from the State Department in subsequent yearly requests.

All grade levels from kindergarten through grade six will be available for internship. However, more stations may exist at one grade level than another.

### *Application for Internship*

All students desirous of being considered for the E-TIP appointment must make application for the program on the forms available at the Student Teaching Office. These forms should be submitted by December 1 preceding the year of internship and should include the student teaching applications (2) as forms in the Student Teaching Handbook (this year 1967-1968 application forms will be submitted by February 2).

### *Contract and Compensation*

Each intern shall be under contract with the district and will adhere to the calendar of said district. The full-year intern shall receive the same benefits as other employees of the district, e.g. medical insurance, sick leave, etc. Full-year interns shall be paid five-eighths of a beginning teacher's salary, wheras those interns teaching half year shall receive one-fourth of a beginning teacher's salary. Variations of the amount may be recommended by the district but approved by the college.

All interns will be under contract and will spend one week as part of that contract in the summer planning workshop prior to the beginning of school. Additional time required by the district will be compensated at an average day's pay for an intern.

Payment shall be made by the district on a monthly basis. The salary is to be paid for the responsibility and time spent beyond that which is normally required for student teaching. The district should not consider employment of interns as a device to reduce expenditure. Interns are encouraged to take a full-year internship if possible.

The cooperating E-TIP teacher shall be compensated by receiving an honorarium equivalent to the compensation paid for supervising a student teacher. This payment shall be $72.00 per year. The intern will be required to pay the normal student teaching fee of $36.00 or $18.00 plus the regular registration fees for the amount of credit being taken for the quarter. Should a full-time intern elect to take the additional six hours (making 18 hours maximum) of student teaching credit, no special student teaching fee will be required to be paid by the intern for those additional six hours, and the cooperating E-TIP teacher will not be compensated for this student teaching credit.

### *College Credit*

During the internship period the intern will earn a minimum of 12 quarter hours of student teaching credit (presently equivalent to Education 137).

Full-time interns may be permitted to register for one class Fall Quarter and six additional hours during each subsequent quarter. At this option the full-time intern may register for six additional hours of student teaching as Education 138 during the winter or spring quarter.

During the winter quarter full-time interns are encouraged to take Education 112 or 102 the first half of the quarter and 102 or 112 the second half of the quarter. Half-time interns will enroll for Education 112 and Education 102 during the half of the quarter in which they are not teaching. The additional course work beyond student teaching credit (12 hours) must receive the prior approval of the coordinator of professional laboratory experiences.

The following chart is set forth as an example for half-time intern "A" and "B" and full-time interns "C."

| | | 1st 2wks. | Fall | Winter | | | Spring |
|---|---|---|---|---|---|---|---|
| Summer Session<br>Micro-Teaching and emphasis on intern preparation and planning | Week(s) of intern planning with school | A* | Intern A | 112 or 102 | A | 112 or 102 | Regular qtr. 15-18 hours |
| | | B* | Regular qtr. 15-18 hours | 112 or 102 | B | Intern B | |
| | | C | Intern full year 134 | 112 or 102 | | 102 or 112 | 139 |

*Intern "A" and intern "B" will both work in the same classroom for the first two weeks of the school year and during the middle week of the winter quarter. This will ensure a more even transition in the classroom shared by interns "A" and "B."

### *E-TIP Stations*

A variety of classroom arrangements and combinations of cooperating E-TIP teachers could exist to provide the teaching station for the intern. No master plan presently tried seems to provide the best one arrangement and combination of classrooms and experienced teachers to provide the essential teaching environment for the intern.

I. Team Teaching
   A. Rooms in pod arrangements.
      1. One cooperating E-TIP teacher and one intern for each full teaching station of the pod.

2. One cooperating E-TIP teacher and a ratio of interns which exceeds the number of full teaching stations of the pod, e.g. a 3-teacher pod could have 4 or more interns and one cooperating E-TIP teacher.
3. One cooperating E-TIP teacher with a combination of interns and other beginning or experienced teachers.
4. Two or more experienced teachers, who have worked together as a team for at least two years, and any ratio of interns. (In this particular situation no one member of the experienced teachers would serve as the cooperating E-TIP teacher.)
5. Same as no. 4 above but with additional student teacher(s) assigned to work with the cooperating E-TIP teachers. In any event, the number of student teachers shall be one less than the number of cooperating E-TIP teachers.
6. Any of the above, with teachers' aides and other personnel being made available.

B. Group rooms not in pod arrangements.
Any of the combinations mentioned under A above. However, the supervision of the cooperating E-TIP teacher should not exceed three rooms if only interns are to be used. Where experienced teachers are assigned to the team, more rooms may be included.

II. Self-contained Classrooms
  A. One cooperating E-TIP teacher with three or fewer interns. Each intern being assigned to one self-contained classroom.
  B. One cooperating E-TIP teacher with no more than three rooms under his supervision yet a ratio of interns that exceeds this number, e.g. three rooms and four interns.
  C. One cooperating E-TIP teacher and a combination of interns and beginning or experienced teachers.
  D. One cooperating E-TIP teacher and intern(s) in a classroom containing a large number of students, i.e. 40 pupils.
  E. Any of the above with teachers' aide(s) being made available.

Districts should submit their request for interns by intern stations with a description of each station and the major assigned responsibility of the experienced teacher(s) in each internship station. The description should also include the total years of teaching experience, the number of years experience in their present assignment, degree(s) held, and general statement as to their teaching qualifications and teaching environment. These requests must be received at the college no later than March 8.

### *Supervision and Control of E-TIP*

Full-time interns should receive a minimum of seven (7) visits from their college supervisor during the first quarter's work and a reduction in visits each quarter thereafter unless conditions within the experience of the intern's program would otherwise merit additional supervisory work.

During the internship the college supervisor is directly responsible for the supervision of interns. School district personnel should coordinate their supervisory efforts through the college supervisor.

Should the internship station present an unfavorable internship environment, the intern may be given another assignment as a regular student teacher under one cooperating teacher. This action would terminate the student's and the district's contract for the internship.

Should the intern's performance be at an unsatisfactory level for the college and for the cooperating district, the intern will be removed and replaced either by another competent student teacher or by another employee of the district.

### *Workshop for Cooperating E-TIP Teachers*

Prior to the summer E-TIP planning workshop session to be held in the districts with interns and cooperating teachers, the cooperating E-TIP teachers should attend a brief workshop conducted by college personnel. The purpose of this workshop will be to thoroughly acquaint the cooperating teachers with E-TIP and to provide some direction as to how they may work more adequately with the interns.

### *Intern Workshop*

All interns assigned will be required to meet in a planning workshop session held at least one week prior to the opening of school with the cooperating E-TIP teacher(s) and other members (principal, interns, teachers, Resource Media Center Librarian) of the E-TIP teaching team. During this period of planning, the intern will become familiar with the school curriculum for his assigned grade level. He will also become familiar with the classroom in which he will be assigned, and a concentrated effort should be made to become acquainted with the records of the students for whom he will have major responsibility.

All half-time interns regardless of the portion (first half or last half) of the year that they will be interns must be in attendance during the opening two weeks of school.

When college registration for the fall quarter takes place, the interns assigned for the second half of the school year will be relieved of their responsibilities in the schools for that quarter.

During the transition from one intern to another, (half way through the year) the first-half intern shall remain for one week assisting the new intern to become established with the on-going curriculum and in becoming reacquainted with pupils of the internship station.

*Seminar for Interns*

A weekly seminar will be scheduled for interns. This seminar activity could well be centered around a common required course, e.g., 112 or 102.

*College Course Planning Recommended for E-TIP students*

Only until internship experiences are evaluated by the college and the district can a plan for E-TIP be completely formulated. However, to guide a student interested in E-TIP the following should be given serious consideration:

| | |
|---|---|
| Freshman year | 48 to 54 hours. Planning sheet for Elementary majors for graduation and certification should be followed. Speech 1 and lower division work in your academic concentrations may be taken. |
| Sophomore year | 48 to 54 hours. Continue meeting college general education requirements, and the additional general education requirements (21 hours) required of Elementary majors. Also enroll in additional classes to meet your chosen academic concentrations. Second quarter – apply for and take education test required for admissions. Third quarter – enroll in Ed. 101. |
| Junior year | 48 to 54 hours. Complete (as much as possible) course work required in your academic concentrations and additional general education requirements. Complete Ed. 121, Ed. 135, music 120, art 84. Ed. 192 is highly recommended. |
| Summer quarter between third and fourth years | Complete Ed. 111, 161, and other general requirements. Interns will have to have six micro-teaching experiences with six reteach sessions thus resulting in 12 experiences before the VTR during the summer micro-teaching clinic. |
| Senior year | Seminar class is included. Ed. 134, 112, 102, 139, or 140. Third quarter – make application for teaching certificate. |

It is highly recommended that the student proceed with his academic concentrations as early as possible in his college career, thus permitting him to finish his work in these areas early enough to permit him to spend his entire fourth year in E-TIP as outlined. An experience of PLEE (Professional Laboratory Exploration Experiences – Ed. 192) is highly recommended for all intern applicants and is to be taken during the junior year.

It is also foreseeable that a student may so plan his work to complete his requirements for certification by the end of a fall quarter and then be available for employment in the public schools. This person can be a candidate for E-TIP, and it is to his advantage to be an intern since he can only gain a year's experience. Students desirous of special E-TIP guidance should see a faculty member in the Department of Elementary Education or the Coordinator of Professional Laboratory Experiences.

### *Observations of Other Teaching Situations*

By joint cooperation of the cooperating E-TIP teacher and members of the E-TIP team at least an equivalent of two full days will be used by each intern to visit other teachers and teaching stations within the community. It is highly recommended that these observations be approximately from 1/3 to 3/4 of the way through the internship.

### *Evaluation of E-TIP*

A continuing program of evaluation will be provided for the intern throughout the assignment. The program will include observations, conferences, and seminar involving the intern, his college supervisor, and cooperating E-TIP teachers. Every effort will be made to help the intern achieve at an optimum level and to arrive at an accurate assessment of his performance.

For full-time interns the college supervisor and the cooperating E-TIP teacher will be required to submit a "Student Evaluation Form" on each intern by the end of the winter quarter. Evaluation forms for half-time interns will be submitted at the termination of the experience.

Careful evaluation will be made throughout the study to attempt to fully assess the intern program. Personnel involved in the evaluations of E-TIP shall include the following:

> Interns, cooperating E-TIP teachers, cooperating principals, collaborating district personnel (Director of Elementary Education, elementary supervisors, superintendent) college personnel (college supervisors, coordinator of

Professional Laboratory Exploration, Chairman of Department of Elementary Education, Dean of Education), personnel of the State Department of public instruction.

A full report of these evaluations, with recommendation for the ensuing year, will be submitted to the State Department on or before January of each year. Should the recommendations be for the acceptance or continued study of the program, the above-mentioned date would be necessary in order to receive the proposal from the State and still process applications and identify internship stations for the fall quarter of the ensuing school year.

## A PROPOSAL FOR CONTINUOUS STUDY AND EVALUATION OF THE SECONDARY TEACHING INTERNSHIP PROGRAM (S-TIP) AT WEBER STATE COLLEGE*

### *The Secondary Teaching Intership Program (S-TIP)*

The basic philosophy of S-TIP is to provide interns with sound and effective supervisory assistance throughout their first year of teaching, to increase the depth and breadth of experience in the curriculum and with pupils, to offer more support in coping with common problems faced by the first-year teacher, and to make provision for deeper insights into the attitudes and activities required of a professional person.

S-TIP is basically designed for two major reasons: (1) to improve the preparation of students receiving teaching certificates at the secondary educational level, thus improving teaching during the first year's experience and reducing the attrition rate among new teachers. The program is seen as a service to the school district, the student in training, and the teaching profession, (2) to improve instruction in the secondary schools by decreasing the student-teacher ratio and thereby increasing the opportunity for individualization of instruction and program flexibility.

It is the intent that under this proposal an evaluation of S-TIP will be made throughout the year. Approval for any new innovations in the program will be requested for each subsequent year for a three year period at which time an evaluation report will be made concerning the program. An interim report will be filed yearly.

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* Weber State College, Ogden, Utah, (M.S.)

*Districts to Participate*

The S-TIP program for the next three years will be confined to Davis, Ogden, and Weber County school districts. Only upon prior approval from the State Department will it be extended beyond these districts.

*Definitions*

S-TIP: Secondary Teaching Internship Program as developed within the framwork of this proposal.

Internship: A full or one-half year's experience in the public school with related seminar and training experiences.

Intern: A Weber State College student qualifying for S-TIP.

Internship-Station: A cluster or set of classrooms located in one area of the building in which interns and cooperating S-TIP teacher(s) are assigned.

Cooperating S-TIP Teacher(s): The experienced professional teacher(s) selected to work with and supervise the team of interns of an internship-station.

*Qualifications for S-TIP Candidates*

The candidates must:

- Have been admitted to the Weber State College Teacher Education program.
- Have an overall GPA of 2.5.
- Present recommendations as evidence of his moral, scholastic, and personal qualifications for the assignment from a faculty member in his major area and from two members of the education faculty who have had the candidate in their classes.
- Present evidence of his ability to complete the requirements for graduation and certification by the end of the summer quarter subsequent to his internship experience.
- Have completed at least one education class at the conclusion of the fall quarter in which the internship application is submitted.
- Agree that he will direct his full energies to the internship.

The candidate should also show a willingness to:

- Conduct himself as a responsible member of the school faculty both from the standpoint of deportment and of fulfilling his obligations to his fellow teachers.

- Attend the required campus seminars and participate in other professional and nonprofessional teaching activities as requested by the employing district or college supervisor.
- Attend summer planning and workshop sessions.

### *Selection of Interns*

The final selection of candidates for S-TIP will be made by the Secondary Student Teaching Committee. The degree to which the abovementioned qualifications are met will constitute the basis of the selection. Public school personnel (principal and the person in charge of employment, etc.) will select the candidates for their school from the group of approved candidates.

### *Subject Areas for Internships*

Basically the internships will be determined by the needs of the participating school districts and the number of acceptable classroom units as determined jointly by the college and public school personnel. Because of these conditions, intern programs will normally include: English, Social Science, Science, Mathematics, Physical Education, Business, Foreign Language, Music, and Art. However, other subject areas may be available from year to year.

### *Applications for Internship*

All students desirous of being considered for the S-TIP appointments must make application for the program on the forms available at the Student Teaching Office. These forms should be submitted by December 1 preceding the year of internship (2 February for 1968). The number of interns shall not exceed a total of thirty. An increase in this number of interns will require prior approval from the State Department in the subsequent yearly innovation requests.

### *Contract and Compensation*

Each intern shall be under contract with the district, and he will adhere to the calendar of said district. The full-time intern shall receive the same benefits such as medical insurance, sick leave, etc., as other professional employees of the district. Interns shall be paid five-eighths of the beginning teacher's salary. Payments shall be made by the district on a monthly basis. The five-eighths salary is to be paid for the responsibility and time spent beyond that which is normally required for student teaching. The district should not consider the employment of interns as a device to reduce expenditures.

The cooperating S-TIP teacher shall be compensated by receiving an honorarium equivalent to the compensation paid for supervising a student teacher. This payment shall be $72 per year. The intern will be required to pay the normal student teaching fee of $36 or $18 plus the regular registration fees for the amount of credit being taken for the quarter. Should a full-time intern elect to take an additional six hours of student teaching credit, no special student teaching fee will be required to be paid by the intern for these additional hours.

### *College Credit*

During the internship period, the intern will earn a minimum of twelve quarter hours of student teaching credit (presently equivalent to Ed. 137). In addition he will be limited to registering for six additional quarter hours of credit in the evening school during any one quarter of the internship. This course work must receive the prior approval of the coordinator of professional laboratory experiences.

The following chart is set forth as an example for half-time intern "A" and "B" and full-time intern "C."

| | | | Fall | Winter | | Spring |
|---|---|---|---|---|---|---|
| Summer Session<br>Micro-teaching and special emphasis on intern preparation and planning | Week(s) of intern planning with school | A* | Intern A | | 112 or 102 | Regular quarter 15-18 hours |
| | | B* | Regular quarter 15-18 hours | 112 or 102 | Intern B | |
| | | C | Intern-full year 105 | 112 or 102 | | 112 or 102 |

*Intern "A" and Intern "B" will both work in the same classroom for the first two weeks of the school year and during the middle week of the winter quarter. This will ensure a more even transition in the classroom shared by intern "A" and "B."

### *S-TIP Stations*

A variety of classroom arrangements and combinations of cooperating S-TIP teachers could exist to provide the teaching station for the intern. No master plan presently tried seems to provide the one best arrangement and combination of classrooms and experienced teachers to provide the essential teaching environment for the intern.

*Examples of possible S-TIP Stations:*

I. Team Teaching
   A. Rooms in pod arrangements
      1. One cooperating S-TIP teacher and one intern for each full teaching station of the pod.
      2. One cooperating S-TIP teacher and a ratio of interns which exceeds the number of full teaching stations of the pod, e.g. a 3-teacher pod could have 4 or more interns and one cooperating S-TIP teacher.
      3. One cooperating S-TIP teacher with a combination of interns and other beginning or experienced teachers.
      4. Two or more experienced teachers, who have worked together as a team for a least two years, and any ratio of interns. (In this particular situation no one member of the experienced teachers would serve as the cooperating S-TIP teacher.)
      5. Same as number four (4) above but with additional student teacher(s) assigned to work with the cooperating S-TIP teachers. In any event the number of student teachers assigned will be one less than the number of cooperating S-TIP teachers.
      6. Any of the above, with teachers' aides and other personnel being made available.

   B. Group rooms not in pod arrangements
      Any of the combinations mentioned under A above. However, the supervision of the cooperating S-TIP teacher should not exceed three rooms if only interns are to be used. Where experienced teachers are assigned to the team more rooms may be included.

II. Self-contained Classrooms
   A. One cooperating S-TIP teacher with 3 or fewer interns, each intern being assigned to one self-contained classroom.
   B. One cooperating S-TIP teacher with no more than 3 rooms under her supervision yet a ratio of interns that exceeds this number, e.g. 3 rooms and 4 interns.
   C. One cooperating S-TIP teacher and a combination of interns and beginning or experienced teachers.
   D. One cooperating S-TIP teacher and intern(s) in a classroom containing a larger number of pupils, i.e. 40 pupils.

Districts should submit their request for interns by intern stations with a description of each station and the major assigned responsibility of the experienced teacher(s) in each internship station. The description should also include the total years of teaching experience, the number of years experience in their present assignment, degree(s) held, and general statements as to their teaching qualifications and teaching environment. These requests must be received at the college no later than March 8.

### *Supervision and Control of the S-TIP*

Interns should receive a minimum of seven (7) visits from their college supervisor during the first quarter's work and a reduction in visits each quarter thereafter, unless conditions within the experience of the intern's program would otherwise merit additional supervisory work.

During the internship the college supervisor is directly responsible for the supervision of the interns. School district personnel should coordinate their supervisory effects through the college supervisor.

Should the intern's performance be at an unsatisfactory level for the college and for the cooperating district, the intern will be removed and replaced either by another competent student teacher or by another employee of the district.

Should the internship station present an unfavorable internship environment, the intern may be given another assignment as a regular student teacher under one cooperating teacher. This action would terminate the student's and district's contract for the internship. This would be a joint action between the district and the college.

### *Workshop for Cooperating S-TIP Teachers*

Prior to the summer S-TIP planning workshop session to be held in the districts, cooperating S-TIP teachers should attend a brief workshop conducted by college personnel. The purpose of this workshop will be to thoroughly acquaint the cooperating teachers with S-TIP and to provide some direction as to how they may more adequately work with the interns.

All interns assigned will be required to meet in a planning workshop session held at least one week prior to the opening of school with the cooperating S-TIP teacher(s) and other members (principal, intern, teachers, resource media center librarian) of the S-TIP teaching team. This session will be left to the district to plan; however, college personnel should be available for consultation. During this period of planning, the intern will become familiar with the school curriculum for his assigned subjects. He will also become familiar with the classroom in which he will be assigned, and a concentrated effort should be made to become acquainted with the school and personal records of the students for whom he will have responsibility.

All half-time interns, regardless of the portion (first half or last half) of the year that they will be interns, must be in attendance during the opening two weeks of school. When the college registration for fall quarter takes place, the interns assigned for the second half of the school year will be relieved of their responsibilities in the schools for that quarter.

During the transition from one intern to another (half way through the year) the first half intern shall remain for one week to assist the new intern to become established with the ongoing curriculum and students of the intern station.

In some situations an intern may go one half day for the entire year. In this particular situation two interns would be used to meet the time normally required of one full-time intern.

*Seminar for Interns*

A weekly seminar will be scheduled for interns at approximately 3:30 p.m.. This activity could well be centered around a commonly required education course, i.e. 112 or 102.

*College Course Planning for S-TIP*

Only until internship experiences are evaluated by the college and the district can a plan for S-TIP be completely formulated. However, to guide a student interested in S-TIP the following should be given serious consideration:

| | |
|---|---|
| Freshman year | 48 to 54 hours<br>Speech 1 and lower division requirements in major and minor. |
| Sophomore year | 48 to 54 hours with Education 101 being taken during the third quarter.<br>Apply for admission to Teacher Education. Continue major and minor requirements. |
| Junior year | 48 to 54 hours–departmental methods, (e.g. Life Science 181–Teaching of Biological Sciences). Also an experience of Ed. 192–Professional Laboratory Exploration Experiences (PLEE) is highly recommended. Course requirements for major and minor. |

| | |
|---|---|
| Summer quarter between third and fourth years | Ed. 146 (General Methods), Ed. 161 (Audio-visual Instruction Materials), Ed. 111 (Background and Status of American Education) and six additional hours in major and minor. |

Normally students entering S-TIP will be required to attend the summer session where specific emphasis and experiences for the internship will be given. The student will participate in the micro-teaching clinic where he will receive a total of 12 experiences before the VTR and will be required to meet for at least one week in a planning workshop session with the cooperating S-TIP teacher and other members (interns or teachers) of the S-TIP teaching team.

During this period of planning, the intern will become familiar with the school curriculum for his assigned grade level. He will also become familiar with the classroom in which he will be assigned, and a concentrated effort should be made to become acquainted with the records of the students for whom he will have major responsibility.

(It is highly recommended that the student proceed with his major and minor classes as early as possible in his college career, thus permitting him to finish his work in these areas early enough to permit him to spend his entire fourth year in S-TIP. It is also foreseeable that a student may so plan his work to complete his requirements for certification by the end of a fall quarter and then be available for employment in the public schools. This person could be a candidate for S-TIP, and it is to his advantage to be an intern since he can not only gain a year's experience but actually make more money than if he were on full salary from January through May.)

### *Observations of Other Teaching Situations*

By joint cooperation of the cooperating S-TIP teacher and members of the S-TIP team at least an equivalent of two full days will be used by each intern to visit other teachers and teaching stations within the community. It is highly recommended that these observations be approximately one-third to two-thirds of the way through the internship.

### *Evaluation of S-TIP*

A continuing program of evaluation will be provided for the intern throughout the assignment. The program will include observation, conferences, and seminars involving the intern, his college supervisor, and cooperating teachers. Every effort will be made to help the intern achieve at an optimum level and to arrive at an accurate assessment of his performance. The college supervisor and the cooperating S-TIP teacher will be required to complete a copy of the "Student Teaching Evaluation Form" by not later than the end of winter quarter of the internship year as a tentative appraisal of the intern's performance. Evaluation forms for half time interns will be submitted at the termination of the experience.

Careful evaluation shall be made throughout the study to attempt to fully assess the intern program. Personnel involved in the evaluation of S-TIP should include the following persons:

> Interns, cooperating S-TIP teachers, cooperating principals, collaborating district personnel (Director of Secondary Education, Secondary supervisor, Superintendent), college personnel (College Supervisors, Director of Laboratory Experiences, Secondary Department Chairman, Dean of Education), personnel of the State Department of Public Instruction.

A report of these evaluations, with recommendation for the ensuing year, shall be submitted to the State Department on or before January of each year. Should the recommendation be for the acceptance or continued study of the program, the above-mentioned date would be necessary in order to receive the approval from the State and still process applications and identify possible intern positions for the fall quarter of the ensuing school year.

## INDIVIDUALIZED TEACHING IN A GROUP SETTING

K. Fred Daniel
Florida State Department of Education

Since all learners differ, it stands to reason that the most effective teaching will result when each learner is treated individually—differently. Consequently, for maximum learning to take place, a teacher should have only one pupil to teach at one time. While this solution is straightforward, it is usually not practical. In most cases, it is necessary for the teacher to deal with learners in groups. The real problem then, is for teachers to find ways of providing individualized instruction in group settings.

In common practice, the sequence is as follows: (1) the teacher presents information, (2) the pupils receive the information and possibly perform some exercises in which they use the information, and then (3) the pupils perform some test exercises which demonstrate the extent to which they have mastered the information. Individualization in teaching takes place only when the teacher assists individual pupils as they perform the exercises in which they use the information. Normally, all pupils spend the same amount of time on a given lesson, and, technically at least, are expected to learn the same amount.

It is apparent that with a teaching model such as that described above, the amount of individualized teaching which a teacher can provide is severely limited.This certainly does not mean that learning will not be individualized. The amount which any pupil learns will depend upon his attitude toward the learning situation (including the subject matter) and upon the knowledge and skills which he brings with him which are helpful in the learning situation. To the extent that the teacher teaches each pupil alike, any relationship between the teacher's teaching behavior and the specific amount of learning of any given pupil is purely a matter of chance. While the mean level of mastery for the entire class has probably risen, the variance within the class has probably increased. That is, while a number of the pupils may have achieved quite satisfactorily, some pupils may not have achieved at all. Stated differently, while the teacher was successful with some pupils, he was a failure with others.

Today's concept of public education does not permit teachers to fail. The knowledge, attitude and skills which form the basis for the public school program are deemed essential for all citizens. A professional teacher is expected to achieve success with all pupils for whom he is responsible.

It is unlikely that such success can be attained without the individualization of teaching. It is also unlikely that sufficient individualization can take place within the teaching model currently employed by most teachers. The concept, "What Is Teaching?" needs to be re-studied.

### *Teaching and the Role of the Professional Teacher*

What is teaching? Few people would admit that they could not answer this simple question. However, most persons have difficulty coming up with a clear statement which distinguishes between "teaching" and "not teaching." The Florida Statutes stipulate that only persons holding teaching certificates may be employed to teach, but the Statutes do not define what is meant by teaching.

Under the traditional model of teacher activity, teaching is assumed to comprise (a) the presentation of ideas or information to pupils and (b) the supervision of these pupils as they work with the ideas or information presented. Both the presentation and the supervision have been assumed to be the exclusive domain of the professional teacher. However, with the addition of teacher aides to the classroom and with the development of new teaching media and materials, the role of the professional teacher in this model needs to be re-studied. It is no longer required that the teacher do everything which has traditionally been viewed as part of his professional responsibility. Teacher aides and assistants can perform many classroom tasks at least as well as the tasks can be performed by professional teachers. Specialists in educational media and materials can develop highly effective teaching materials which present information and thus allow teachers to concentrate on other tasks.

It is now possible for the teacher to individualize instruction. Teachers can no longer fall back on the traditional excuses when a certain percentage of the pupils in their classes fail to learn. It is no longer excusable for teachers to fail with a certain portion of their pupils.

But effective utilization of teacher aides and teaching media will not automatically result from their mere availability. Teachers must first take a new view of their professional role. They must then develop the necessary skills for functioning in this role. Finally, they must see that teacher aides who work with them receive the training necessary in order that they can function in a complementary role.

### *A Concept of Teaching*

In recent years, a limited number of educational scholars have turned their attention to "theories of teaching." A summary of some of these writings is included in the appendix of this paper. The following concept has its roots in those writings.

The fundamental element in the concept is a definition of teaching: Teaching is viewed as a decision-making/decision-implementing process intended to promote learning. The types of decisions which must be made in teaching can be summarized with three questions:

> (1) What, specifically, does the teacher want pupils to learn? (That is, what does he want pupils to know, feel, or be able to do which they do not already know, feel, or have the ability to do.)
> The examples which could be suggested to illustrate this question are endless. The following are specimens: (a) for pupils who are slow readers to enjoy reading more, (b) for students who appear bored to become more interested in class activities, (c) for all members of a class to be able to do at least 3 pushups, (d) for all pupils in the class to complete their work in the allocated time, (e) to eliminate tardiness, or

(f) for every child to participate in the singing of every song during music class.

(2) How will the teacher determine the extent to which pupils have accomplished the objective?
Here are examples of answers to this question. These examples relate to the first 4 examples given for question 1, above. (a) (for getting slow readers to enjoy reading more) by observing the number of slow readers who voluntarily select reading during free activity time, by observing the eagerness with which slow readers volunteer to read during reading group sessions, by observing the number of library books which slow readers report reading: (b) (to stimulate the interest of bored able students) by observing the number of suggestions of things they can do during class which those students make, by observing the number of school related outside activities which these students undertake, by observing the number of times during the school day which those students exhibit bored or inattentive countenances, (c) (for all pupils to score 100% on spelling tests) observe scores on spelling tests.

(3) What teaching materials and procedures should be used to accomplish this objective? This question can be broken down into a number of subquestions.

(a) How will the teacher determine the extent to which pupils already possess the knowledge, attitudes, or skills represented in the teaching objective?

(b) What procedures will he use to determine the extent to which the objectives are accomplished?

(c) How will he engage the interest of the pupils in pursuing the objective?

(d) How can the necessary information be presented to the pupils (or discovered by them) so that they will be able to accomplish the objective?

(e) How can pupils gain experience working with the elements of information so that they will thoroughly understand the concepts necessary for accomplishing the objective?

(f) What types of experiences should the pupils encounter in order to apply their mastery of the concept and demonstrate that they actually have accomplished the objective?

(g) What materials should be used in each of the above steps?

The basic premise underlying the decision-making/decision-implementing concept of teaching is that the decision making described above is the domain of the professional teacher. That is, decision making is the heart of teaching. These decisions cannot be delegated to teacher aides, except when the decisions might be based upon objective rules established by the professional teacher. The idea of decision-rules is proposed by Dwight Allen and Peter Wagschal in an unpublished paper, "Flexibility and Credentialing – A New Look." Their discussion of decision-rules deals with the teacher's role in his interaction with students. They state that in much of this interaction, the responsibility of the teacher is primary, since no one could specify beforehand his decisions, or even his decision-rules, in such a way as to cover all important eventualities. They point out, however, that in many school situations, decision-rules can be specified in advance and that these decisions can be carried out by a person with secondary responsibility, such as a teacher aide. Examples of situations in which supervision could be carried out by a person with secondary responsibility include monitoring the cafeteria or the viewing of a film by a large group of pupils. These are clearly situations in which decision rules can be specified in advance.

It stands to reason, then, that any decisions which are made by a professional teacher can be implemented by persons with lesser qualifications, provided that the implementation does not require subsequent decisions which cannot be made on the basis of decision-rules. It follows, also, that in order for the teacher to individualize instruction he must find ways to delegate those teaching-learning activities which can be delegated so that he can concentrate on making better decisions regarding learning objectives for individual pupils and so that he can spend a greater portion of his time performing the types of interactive tasks which cannot be delegated. The teacher, thus, is now viewed as a manager of learning, rather than a presenter. He presents ideas and materials to the group as a whole only when he cannot find more effective or more individualized devices or techniques for the presentation. He goes as far as possible in adjusting his teaching to his pupils, rather than keeping his teaching constant and requiring his pupils to make the total adjustment to his teaching.

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## A DIAGNOSTIC SYSTEM FOR THE EVALUATION OF TEACHING PERFORMANCE*

The following is an outline of the system for evaluating teaching performance for the purpose of improving instruction. It is designed to focus upon the primary object of instruction—pupils themselves. For this reason, the system will normally make extensive (but not exclusive) use of product measures. The term product measure refers to any measure which uses pupil behavior (rather than teacher behavior) as basic data.

*Step 1:* On the basis of conference(s), or on the basis of visit(s) and conference(s), the teacher and the evaluator agree on the aspect of teaching to concentrate on improving.

> Examples: (a) to get a low reading group to enjoy reading more, (b) to stimulate the interest of an able student who is bored with class, (c) for all pupils to get 100% on spelling tests, (d) for certain nonparticipants to begin participating in class discussions, (e) for all members of a class to be able to do at least 3 push-ups, (f) for all pupils in the class to complete their work in the allocated time, (g) to eliminate tardiness, or (h) for every child to participate in the singing of every song during music class.

*Step 2:* The teacher and the evaluator agree upon the method for recording the performance of pupils (or the teacher) so that it will be possible to measure the improvement in the selected aspect of teaching. (This includes agreement upon the person who will collect the information if this appears to be a significant factor.)

> Examples: (a) (for getting the low group to enjoy reading more) the number of low group pupils who voluntarily select reading during free activity time, the eagerness with which members of the low group volunteer to read (as observed by a fellow teacher), the number of library books which low group members report reading; (b) (to stimulate the interest of an able student) the number of suggestions of things he can do during class which that student makes, the number of school-related outside activities which that student undertakes, the number of seconds during 5 selected 5-minute periods throughout the day which that student exhibits a bored inattentive countenance; (c) (for all pupils to score 100% on spelling tests) scores on spelling tests; (d) (for certain non-participants to begin participating in class discussions) the number of times which selected non-participants volunteer.

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*This paper was prepared in December, 1968, by the Division of Teacher Education, Certification and Accreditation in the Florida State Department of Education, It represents only one of a number of approaches for evaluating teaching which may be effective for improving instruction. Each school district in Florida has the option of selecting its own evaluation system provided that the system selected is designed to improve instruction.

*Step 3:* The teacher and the evaluator agree on the times for collecting the pre- improvement and post-improvement data.

*Step 4:* The teacher and the evaluator agree on the method for attempting to bring about improvement.

> Examples: (a) the teacher will do whatever he considers appropriate, (b) the teacher and the evaluator will discuss possible courses of action and the evaluator may make suggestions, but the teacher will be free to do whatever he considers appropriate, (c)the teacher will complete inservice education activities specified by the evaluator.

*Step 5:* Execute.

*Step 6:* Following the collection of post-improvement data, the teacher and the evaluator will either (a) return to Step 1 and select a different aspect of teaching to concentrate on improving, or (b) select a time for collecting additional post-improvement data and return to step 4.

# Chapter XII

# Setting the Stage for the Future

An unmistakable aspect of rationale for the M-STEP project involves the emerging responsibility of state departments of education to assist in defining new needs in teacher education and in taking an active part with the states' colleges and universities in developing programs of teacher education which meet these evolving needs. This project goal, one of several, its manifestations and resultant activities, may be reasonably clear from Volumes I and II of *Teacher Education in Transition.*

A point which may be somewhat less clear, though it does exist in previous context, is that the project designers also viewed their brainchild as a curtain raiser for developments which will occur in the years following the close of the project. In addition to immediate and significant gains believed likely to arise from the multiple-state operation in teacher education, these individuals dreamed of and hoped for the development of new organizational systems in each state which could originate and propagate aspects of desirable change in future years and decades. It is possible that this vision embraced not only continued service in the seven states of the project, but also considered prototypes and adaptations which others might find useful.

With long-range continuation aspects of project-initiated goals in mind, the Director, the Steering Committee of the Coordinating Board, the Coordinating Board itself, and U.S. Office of Education staff in a series of conferences concurred in the determination of some needed areas of concentration pointing toward the immediate and long-range future.*

As a result of this effort the departments of education in each of the project states developed during July and August of 1968 what was called a short-term state project proposal. These proposals were intended to aid each state in defining its post-M-STEP directions in the improvement of teacher education programs and to continue operation of the planning structure. It will be noted that these structures had incorporated professional personnel representing the state's institutions and agencies possessing prime interests in teacher education. These projects were reviewed by the project administration and by the Coordinating Board in accordance with agreements previously reached with U.S. Office of Education officials and were funded as continuation projects through the first few months of 1969.

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*As a result of this type of planning, areas of M-STEP concentration for July-December, 1968 (later extended to June 30, 1969) assumed three forms: (a) The preparation of extensive written materials dealing with project experimentation and resulting directions, including selected guideline-type materials which had resulted from project effort, as well as several items which had been prepared by other sources as project-centered aids to teacher education. Some of these were issued as monographs,

All short-term contracts for 1968-69 were negotiated by the project administration with each of the state departments of education. The department in turn assumed responsibility for the project's execution.

Topics selected by the states for sharpening details of transitional effort and pointing the way toward future development included:

- Statewide planning of new directions of inservice growth for supervising teachers under the leadership of the state department of education, with stress on the use of interaction analysis in classroom practice.
- Acquainting school and college personnel of the state with the student teaching pilot center concept as it had developed during 1966-68. The intent was to pave the way for the creation of new student teaching centers.
- Creating new capabilities in the analysis of teaching, and expanding the uses of film loop cartridges for single-concept teaching episodes.
- Utilizing the professional resources of a state in a school-college cooperative production of guidelines for student teaching in teacher education centers.
- Continuing the operation of statewide committees for recommending new developments in teacher education in cooperation with regional councils on student teaching.
- Assumption by the state department of education of a service role for the state's regional planning councils.
- Holding one or more statewide representative meetings of educators to discuss incorporating the use of performance objectives in program planning and development.

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but most are included in the two volumes of *Teacher Education in Transition*.

(b) Further definition of the roles of state departments of education in teacher education, a delineation which resulted from project experience in each of seven states. This task was assumed by the project director, the Coordinating Board, and by consultants employed to aid in the study. (c) Preparation and implementation of a multiple-state effort toward a "phase-in" of state sponsorship and an accompanying "phase-out" of federal support.

- Augmenting a staff development effort to enable state department of education personnel who are closely associated with teacher education to view emerging state responsibilities in this field. Activities designed to gain insight into various teacher education projects fostered by M-STEP were included in the scope of this effort.

Project states have submitted reports on the nature and outcomes of their 1968-69 activities. Segments of these reports are presented in the sections below.*

## A STAFF DEVELOPMENT PROJECT FOR TEACHER EDUCATION PERSONNEL IN THE FLORIDA STATE DEPARTMENT OF EDUCATION

During the 1968-69 school year, four teacher education staff members from the Florida State Department of Education participated in a staff development project designed to (a) enable the participants to view State Department of Education teacher education activities in Florida in perspective and (b) gain insight into some of the innovative teacher education practices fostered by M-STEP. To accomplish the first objective, the participants visited state departments of education and conferred with teacher education personnel in those departments in five states. To accomplish the second objective, the participants visited schools and universities in three M-STEP states and also visited the Far West Laboratory for Educational Research & Development where they conferred with the persons who designed some of the materials which have been disseminated in Florida by Florida M-STEP.

### *The Status of Teacher Education Activities in the Florida State Department of Education*

The Florida State Department of Education has had personnel with responsibilities for leadership in teacher education for many years. Through participation in the Multi-State Teacher Education Project (1966-68), the staff was expanded and the activities intensified. The State recently expanded the teacher education staff further. The present staff is continuing

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*The Short-Term Projects of two states, in part took the form of special monographs prepared for state distribution. Maryland's *A Partnership: The Teacher Education Center* appears as Chapter X of this volume. Utah's *A Teaching Behavior Code* appeared in Volume I of the series. In addition, Utah is developing a series of teaching episodes on film, and Maryland professionals have developed a guide for student teaching.

and expanding the following activities which were fostered during M-STEP: (a) educational manpower studies, (b) computer-assisted planning for anticipating educational personnel needs, (c) development of revised standards for approving teacher education programs (to give greater emphasis to teacher performance), (d) development of programs for the effective training and utilization of teacher aides, (e) development of improved and greatly expanded inservice education programs in elementary and secondary schools, (f) the development of improved programs for evaluating teaching, (g) the coordination of proposals being submitted under the Education Professions Development Act, and (h) the implementation of strategies for bringing inservice and preservice education closer together and strengthening institution-school district partnerships.

The major responsibility for leadership and regulatory activities relating to teacher education in the Department rests with the Division of Teacher Education, Certification and Accreditation. The activities of this Division are directed by an Assistant Commissioner. An Executive Director of this Division has responsibilities related to all the areas encompassed in the Division.

Six additional staff members have direct responsibilities in the teacher education area. While each of these persons has one or more specific areas of responsibility, they are not restricted in their work so as to operate exclusively in a specific area. Consequently, most of the teacher education activities of the Division are carried out as team efforts.

Three staff members hold the title of Associate for Teacher Education. One is responsible for working with higher institutions, one with higher institutions and school districts on both preservice and inservice programs and also to provide staff assistance to the Teacher Education Advisory Council; a third serves as a consultant in a special project for designing new types of teacher education materials.

In addition, a Director of Educational Recruitment directs a wide variety of services to assist Florida school districts in recruiting qualified educational personnel. He also conducts studies to identify future personnel needs and ways to meet these needs. A Director of Educational Personnel Development works with local school districts in planning inservice education programs and administers the State system for approving inservice programs. A Director of Teacher Certification administers the Office of Teacher Certification.

### *Staff Development in the Florida State Department of Education*

The Florida State Department of Education has made a definite commitment to staff development for its own personnel. The Department's staff development program is evolving to encompass three different types of activities: (a) activities intended to increase staff members' interpersonal skills (i.e., skills for working with people), (b) activities intended to broaden or update staff members' knowledge in areas pertinent to their SDE responsibilities, and (c) activities intended to increase the technical competence of staff members. The present project relates to area b, activities to increase and update staff members' knowledge. Other activities of this type which have been carried out by teacher education staff members during the past year include participation in conferences and conventions, enrollment in university courses, and individual professional reading. Teacher education staff members have also participated recently in activities of the other two types. Two staff members took part in NTL training sessions in Bethel, Maine, during the summer of 1968. A number of staff members have participated in a training program to develop skills in systems analysis.

### *Itinerary for Project Activities*

Far West Trip

November 4, State Department of Education, Olympia, Washington. Discussions were held with Wendall Allen and William H. Drummond regarding their teacher education objectives for the State of Washington and their program for attaining these objectives.

November 5, University of Washington, Seattle Public Schools and Bellevue Public Schools. In Seattle, the group met with a number of persons from the Seattle Public Schools, the University of Washington, and the State Department of Education to discuss the University of Washington/Seattle Public Schools project for integrating preservice and inservice teacher education. In Bellevue, the group met with some teachers, some principals, and the superintendent of the Bellevue Public Schools and discussed the Washington State University/Bellevue Public Schools project for integrating preservice and inservice teacher education.

November 6, Far West Laboratory for Educational Research and Development, Berkeley, California. The group met with Warren Kallenbach and other laboratory personnel to discuss and view Minicourses which are being developed by the Laboratory.

November 7, Brigham Young University, Provo, Utah. The group visited with Hugh Baird and others to discuss continuous progress teacher education and micro-teaching as it is being implemented at Brigham Young University.

November 8, Utah State Department of Education, Salt Lake City. The group met with Vere McHenry and discussed the program of the Utah SDE for leadership in teacher education.

Eastern Trip

March 25, State Department of Education, Raleigh, North Carolina. Discussions were held with J. P. Freeman, James Valsame, Sam Hill, and Morris Brown regarding their goals for teacher education in North Carolina and their strategy for obtaining these goals.

March 26, Baltimore, Maryland. Met with Kenneth Brown, Herman Behling, and Dale Swecker in the State Department of Education. Similar discussions were held relative to teacher education in Maryland. The group also visited Public School 99 in Baltimore and met with Jack Epstein and his associates in Project Mission. Discussions were held relative to the manner in which Project Mission is attempting to prepare better teachers for urban schools.

March 27, Albany, New York. Met with Vince Gazetta, Bill Boyd, Mike Van Ryn, Charles Mackey, Earl Flatt, and Ted Andrews in the State Department of Education. Discussions were held relative to the activities of the Division of Teacher Education and Certification for exercising leadership in teacher education.

### *SDE Teacher Education Activities in Perspective*

The first objective of this staff development project was "to enable the participants to view State Department of Education teacher education activities in perspective." The comments below relate to the major responsibilities of the participants and to relevant insights gained by these participants.

In administering the State program for the approval of teacher education programs, the Florida State Department of Education has been moving toward a performance-based approach. The States of New York and Washington are also moving in this direction. Washington has committed itself to changing certification standards to mandate such an approach. New York is seeking projects which might be funded to implement this approach on a pilot basis. Because of the size of the State and present conditions in education, it does not seem practical for the State of Florida to mandate performance-based teacher education programs in all institutions and school districts. On the other hand, Florida does not presently have special funds for supporting performance-based pilot programs. However, the State is in a position to assist and encourage a number of institutions to develop such programs. Consequently, the best strategy is probably to encourage performance-based programs without forcing all institutions to enter precipitously into such programs. Thus, it will be necessary to continue providing a means for approving quality programs which are developed in the standard manner. Also, the availability of a small amount of "seed money" would be beneficial.

Florida has recently established a system for approving plans for inservice education which are developed and implemented within school districts. When this plan was conceived, it was felt that it should be designed to benefit all teachers. This conviction is still held. However, there may be reason to give special attention to persons teaching on temporary certificates within this plan. A teacher is issued a temporary certificate when his academic work does not fulfill the requirements for full certification. Since the purpose of inservice education is to improve the quality of the educational program offered to children, it seems reasonable that teachers holding temporary certificates are the ones who are in the greatest need of help. North Carolina has established a program to assist such teachers. However, the North Carolina program is not at all similar to the master plan concept being promoted in Florida.

In the area of teacher recruitment, the Florida program has attempted to provide a wide variety of services to assist Florida school districts in recruiting qualified personnel. Also, there has been an emphasis on seeking more definitive information on the present and future needs for personnel and the potential supply to meet these needs. Florida appears to be doing more in these areas than most other states. It appears, however, that there are a number of alternatives for recruiting special types of personnel or personnel from specific demographic groups which should be explored.

Florida has made special efforts to attempt to articulate preservice and inservice teacher education programs. The primary strategy for doing this has been to develop the guidelines. This development has centered around the Florida Teacher Education Advisory Council. This seems like a sound strategy. This strategy could be facilitated by making available "seed money" to stimulate pilot efforts in designing and testing guidelines. Also, in the guidelines development process, it is important that optimum use be made of practitioners and that the process of guideline development not be dominated by higher education personnel.

### *Adapting M-STEP Teacher Education Innovations to Florida*

The second objective of this project was "to gain insight into some of the latest teacher education projects fostered by M-STEP." Such insight will facilitate the process of adapting these M-STEP innovations to Florida's needs.

In Washington, the participants studied the joint projects being conducted by Washington State University and the Bellevue Schools and by

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the University of Washington and Seattle Public Schools. These projects are designed to bring about great articulation between preservice and inservice teacher education. As indicated above, many of the current teacher education projects being carried out in Florida are also aimed toward bringing inservice education and preservice education closer together. The Washington projects have some elements in common with a model program for preparing elementary teachers designed by Florida State University. This program features inservice education in "portal schools" during the first two years of teaching. A major current need in Florida related to programs of this type is for greater input from public school personnel and greater commitment from public school personnel to articulate preservice and inservice programs.

The microteaching activities being used at Brigham Young University have considerable potential applicability to Florida teacher education. Florida M-STEP was responsible for securing the services of Utah personnel as consultants on microteaching as a technique in inservice education in a manner which will not require the services of college professors. The minicourse concept, developed by the Far West Laboratory for Educational Research and Development, is one approach which is being used.

The teacher education center concept which was developed in Maryland under M-STEP is another approach that can be adapted to the needs of Florida. Florida Technological University, a newly established State University, has established teacher education centers somewhat similar to the Maryland centers. As a long-range objective, it is hoped that the concern for teacher education and a mastery of teacher education skills which is promoted in teacher education centers will be a characteristic of all schools in Florida which employ inexperienced teachers. Thus, virtually every school will be a "teacher education center."

## MICHIGAN DEPARTMENT OF EDUCATION

### Lansing

In Michigan, a high percentage of student teaching occurs in the field, and usually in a cooperative situation. The state is divided roughly into nine regions, all of which have advisory committees representing participating school districts, colleges, and universities. Without generalizing as to practice in all of these regions, it may be stated that frequent practices in the state in 1969 include:

1. *Regional agreements as to the placement of student teachers*

   Such regional agreements vary in their operation. In several instances, the colleges have appointed joint administrators whose responsibilities are for all placement within the area.

2. *Agreements regarding the reimbursement of supervising teachers in the public schools*

   Recent discussions in this area have centered on ways in which institutions and schools can provide "services" to each other in lieu of direct payment of money to supervising teachers and/or cooperating schools. The "Deans and Directors Position Paper on Student Teaching" is an example of this "service" concept.

3. *The exercise of an advisory function by the regional committee as to local internal policies in student teaching*

   Regional committees have had some influence in initiating local studies into the operation of student teaching programs and in assisting in the organization of local administrative structures for the improvement of student teaching. Sometimes such regional committees have adopted advisory policies on the local administration of student teaching programs.

   Northern Michigan University had a series of regional conferences on the standardization and improvement of local administration. Oakland County now has a study on directed teaching conducted with the hope that some common understandings regarding student teaching programs will be arrived at.

4. *The regional development of standards for admission, and further, standards for the student teaching experiences themselves*

   General discussion of institutional policies for admission to student teaching and standards for student teaching experiences have resulted in considerable revision of institutional requirements following the exchange of information. In some instances there have been regional adoptions of general standards.

   In the hope of improving student teaching programs, Central Michigan University pays the tuition for supervising teachers to take the course in the supervision of student teaching. Region II also had a conference of persons representing certain subject matter disciplines of the public schools with their counterparts from the university. A conference was requested by the public schools representatives in the hope of improving student teaching in the particular disciplines and in general developing more meaningful experiences for the student teacher.

5. *Frequent mutual acceptance of credit among several institutions operating in a region*

There is an increasing tendency in Michigan for the mutual acceptance of credit to apply on a degree or teacher's certificate. Presumably this was generated by regional discussions.

With prior agreement, directed teaching credit can be transferred from any institution to another institution in the state of Michigan. This possibility illustrates the growing understanding about other directed teaching programs which has resulted from institutional and public school participation at the regional level.

6. *A tendency to refer problems which can best be solved on a regional basis to the advisory committee for discussion and recommendation*

The above statements indicate the nature of the problems so far discussed. There is a tendency to refer regional solutions of problems to the state reaction panel for discussion and recommendations. The regional organization has resulted in the solution of many problems on a regional basis, as indicated elsewhere. The reaction panel has acted as a coordinating agency and the solutions in question are reported to them. Consequently, information regarding problems and their solutions has been in many instances distributed state-wide and has influenced not only this sort of problem solution but the standardization of guidelines and the standards for student teaching programs.

7. *The employment of one administrator by several institutions where this is appropriate*

One Student Teaching Center has been cooperatively operated by four teacher education institutions. Colleges jointly pay the expenses of the operation including the salary of the administrator who is responsible for supervising of the student teaching and assignment to student teaching positions. At least one other center in the state has adopted a similar format and several others operate on a generally cooperative basis. In other words, student teaching assignments are made cooperatively and supervision of student teaching is carried on according to mutual understandings among the colleges and universities which are involved.

8. *The legal responsibility and liability of student teachers and supervising teachers*

   This is a state-wide concern which is echoed at the regional level for the improvement of the student teaching experience and for the solution of several different problems including questions of legal responsibility and liability of student teachers, and supervising teachers and master contract.

   The influence of regional organizations has been demonstrated in the development of master contracts in local school systems where these deal with the administration of student teaching.

9. *The coordination of efforts on a voluntary basis by a reaction panel which has requested that it be attached to the state advisory committee on teacher education and certification as a sub-committee*

   The reaction panel operated as an advisory body to the state-wide effort so long as federal reimbursement was available. Following the cessation of federal reimbursement, the panel continued to function as a self-perpetuated body and new members have been elected for the school year 1968-69. The panel has requested to be attached to the newly formed state advisory committee on teacher education and certification as a sub-committee. No action on the request has been taken yet, but the advisory committee is considering the request.

## SOUTH CAROLINA DEPARTMENT OF EDUCATION
## SHORT-TERM PROJECT

Two workshops on Interaction Analysis were held in South Carolina in recent months, one at Newberry College, Newberry, S.C., on October 5, 1968, and one at Allen University, Columbia, S.C., on December 14, 1968. Both were held under the sponsorship of the Office of Teacher Education and Certification of the State Department of Education. The coordinator of the Newberry College workshop was Dr. James F. Cummings, Head, Department of Education, Newberry College; the coordinator of the Allen

University workshop was Dr. Sylvia Swinton, Chairman, Division of Education and Director of Teacher Education, Allen University.

The objectives of the two workshops were:

1. Participants perceive interaction analysis techniques as a step toward the objective analysis of classroom interaction for the purpose of improving instruction and learning.

2. Participants perceive the Flanders technique of interaction analysis as a means of obtaining quantitative, objective data for analyzing the verbal interaction between teachers and pupils.

3. Participants perceive the Flanders technique of interaction analysis as a means of improving feedback about their teaching to inservice teachers and student teachers.

4. Given a set of contrived observation records, participants
   a. construct a 10 x 10 Flanders matrix of the observations with 100% accuracy
   b. compute the I/D ratio, the percent of teacher talk, the ratio of student talk to teacher talk, and other computations as time permits.

5. Participants view interaction analysis as a technique which they would like to employ for their own improvement as teachers.

6. Participants broaden their awareness of interaction analysis instruments beyond the Flanders technique.

7. Participants desire greater experience with interaction analysis.

The selection of the persons invited to participate in the Newberry workshop was based on the following criteria:

1. They must be employed in the Newberry County Public Schools.

2. They must have had more than one year of experience in their position.

3. They must be interested in or involved directly with the teacher education program at Newberry College as
   a. administrative persons connected with schools in which Newberry College students do their student teaching,
   b. classroom teachers engaged in supervising student teachers from Newberry College,

c. college instructional personnel having contact with student teaching at Newberry College,
d. student teachers.

These criteria were applied to insure a community of interest on the part of all participants and because these persons were known to be interested in improving teacher education. Further, it is hoped that the workshop is the start of a program to expand the use of interaction analysis in the preparation of teachers for the schools of the State; therefore, persons already involved in a program of teacher education would seem to have the greatest potential for such expansion.

The criteria for the selection of the persons invited to attend the Allen University workshop were:

> They must be persons who would be involved in the student teaching program during the spring semester of the 1968-69 school terms as
> a. administrative persons connected with schools in which Allen University serves helping teachers or student teachers,
> b. classroom teachers serving as cooperating teachers in the student teaching program at Allen University,
> c. college instructional personnel having contact with teacher helpers and student teaching at Allen University,
> d. student teachers.

The participants at the Newberry College workshop represented the following professional positions:

One school superintendent
One elementary school principal
One secondary school principal
One coordinator of Title I programs
Two elementary-level classroom teachers
Two secondary-level classroom teachers
Four secondary-level student teachers
Four college faculty members from the department of education

The participants at the Allen University workshop represented the following professional positions:

One secondary school principal
One elementary school principal
One secondary-level classroom teacher
One elementary-level classroom teacher
Eight college faculty members from the department of education
Four elementary-level student teachers
One secondary-level student teacher

Dr. Joseph Bowles, Dr. James F. Cummings, and Dr. George W. Hopkins attended both workshops as consultants.

The format for the two meetings was very similar and was as follows: An attitude scale, developed by members of the department of education at Newberry College, was administered immediately after the usual formalities of beginning any meeting. This administration was to determine the degree of acquaintance with interaction analysis the participants had at the beginning of the program. Random numbers were assigned to the attitude scales in order that the respondents would remain anonymous to the person tallying the results, but in order to measure change in attitude from the experiences provided in the workshop. The same number was used by each participant on the pre-test and the post-test. See Appendix C for a copy of this attitude scale. There followed a short presentation on the history of interaction analysis and a step-by-step presentation of the Flanders instrument from recording of observations to the completion of the matrices derived from the raw data. Film strips and audiotapes prepared by Dr. Flanders and his associates were used to supplement the oral and visual presentations by Dr. Bowles.

Participants were given a set of contrived observations, totalling 68 items in all, from which a 10 x 10 matrix was constructed in accordance with the Flanders technique. A blank matrix was supplied for this purpose. From these data, the I/D ratio, the ratio of teacher talk to pupil talk, the percentage of teacher talk, and other computations were made and the results checked informally. The consultants and others worked with individuals as the need arose to insure their understanding and participation. A great deal of interest was generated by these presentations, with total group involvement in the experience. Considerable discussion ensued as the participants sought to grasp the implications and possible applications of interaction analysis in their work as teachers. A very brief presentation of Spaulding's "CASES" instrument followed the luncheon break. The concluding activity in both workshops was the second administration of the attitude scale in an effort to determine the changes that had occurred as a result.

Data taken from the attitude scale at the beginning of the workshops reveal differences in the level of preparation of the participants as shown below:

| LEVEL OF PREPARATION | NEWBERRY | ALLEN |
|---|---|---|
| Non-degree (students) | 4 | 5 |
| Bachelor's degree | 4 | 3 |
| Master's degree | 5 | 11 |
| Doctor's degree | 1 | 1 |
| Total | 14 | 20 |
| No information as to level of preparation | | 2 |
| Total respondents | 14 | 22 |

The majority of the participants in both workshops had completed their degree programs seven or more years prior to the workshop; however, half or more of each group had returned to school for one or more courses within the past five years. Response to the question (Number 14 on the attitude scale) relating to the introduction of some innovative practices in the classroom within recent years suggests that the participants, as a group, are not (or have not been) active innovators in their own classrooms.

About fifty percent of the participants in the Newberry workshop indicated no knowledge of interaction analysis instruments whereas about sixty-eight percent of the participants in the Allen workshop gave a similar response. Those who had prior knowledge of interaction analysis were most often familiar only with the Flanders instrument.

Following the workshop experience, the participants responded to questions concerning the applicability of interaction analysis to a variety of educational situations as shown in the following tables:

| USE | PERCENT WHO BELIEVED I/A USEFUL | |
|---|---|---|
| | NEWBERRY | ALLEN |
| To evaluate student teachers | 50 | 37 |
| To assist in the instruction of student teachers | 78 | 37 |
| To evaluate regular classroom teachers | 45 | 37 |
| To provide feedback to regular classroom teachers for self-improvement | 85 | 63 |

One hundred percent of the Newberry participants and sixty-three percent of the Allen participants thought interaction analysis suitable and profitable for use in any public school classroom. Indeed, seventy-eight percent of the Newberry participants and seventy-nine percent of the Allen participants indicated they would be either willing or eager to apply interaction analysis for the purpose of self-analysis for *another* teacher or a student teacher under their direction, and about eighty-five percent of both groups said they would be willing to have the technique employed for their own self-improvement. However, there was somewhat less eagerness for the technique to be employed for the purpose of determining whether or not they should be continued in their position in the classroom (35 and 58 percent, respectively). Furthermore,about eighty-five percent of both groups indicated a willingness to have an *administrator* or *supervisor* use interaction analysis to provide information for the teacher's self-improvement, but a much smaller percentage were willing for either *another teacher* or someone from outside the school or system to employ the technique for the purpose. These percentages were, for the Newberry group, forty-five and forty-three percent respectively, and for the Allen group sixty-three and fifty-eight percent respectively.

Finally, about one-half of the Newberry participants and about one-third of the Allen participants indicated that they would prefer not being subjected to interaction analysis. There was, however, almost unanimous agreement in both groups that the workshop was a professionally stimulating experience, and something in which they would willingly participate again for further exploration of interaction analysis.

### *Evaluation*

To the extent that the attitude scale elicited candid responses, and to the extent to which the scale included discriminating items, it can be said that all of the objectives of the workshops were achieved. It is true that all of the participants did not construct the matrix with 100% accuracy, but this is the only particular which was not attained. The general pattern of responses in both workshops was progression from puzzlement to confusion to understanding to enthusiasm for something new and promising. Perhaps the most encouraging aspect of the whole experience was the often expressed desire on the part of the participants to gain more experience with the whole constellation of interaction analysis instruments in order to gain confidence in their use.

## WASHINGTON M-STEP

## REPORT OF SHORT-TERM PROJECT

The contract between the Multi-State Teacher Education Project and the Office of the State Superintendent of Public Instruction for the State of Washington was extended from 1 July 1968 to 31 December 1968 primarily for two reasons: (1) to provide for a meeting of concerned persons across the state to discuss and work with performance objectives, and (2) to obtain the services of a neutral professional writer to write about the Washington M-STEP.

This document is a report of activities and accomplishments relative to the six-month short-term project. The reader is requested to examine the "Final Report of the M-STEP for the State of Washington" dated June 1968 for more detail.

### *Conferences on Performance Objectives*

Instead of a single meeting re the discussion of M-STEP and the application of performance objectives to teacher education, it was decided that two meetings should be held, one on the west side of the state on the campus of Seattle Pacific College, and one on the east side at Eastern

Washington State College. By combining the resources of M-STEP, the Washington Education Association, the Northwest Regional Educational Laboratory, and the Title III program of the Office of the Superintendent of Public Instruction, approximately one hundred persons were invited to attend. Persons invited included members of the Standards Revision Committee, members of coordinating committees from the various M-STEP projects, members of the Triple T planning committee, college students in M-STEP, Title III Project Directors, college students from SNEA chapters, members of the WEA-TEPS Commission, members of the WEA Office of Accreditation and Certification Commission, members of the staff of the Superintendent of Public Instruction, and others from colleges, school organizations and professional associations.

Six consultants were employed for each conference from universities and school systems known to have been knowledgeable re the use of performance objectives in teacher education. (Because of ground fog in Spokane, two of our consultants did not make the EWSC conference.)

The coordinating committees and M-STEP students associated with the Seattle-University of Washington and the Edmonds-Western Washington State College M-STEP Projects met at Seattle Pacific College; the Bellevue-Washington State University Project people met at Eastern Washington State College.

## WORK CONFERENCE ON "PERFORMANCE OBJECTIVES AND EVALUATION"*

November 18, 19, 1968, Seattle Pacific College
Work Group No. 1 F. Herbert Hite, Consultant

*Performance levels for the objective:*

Teachers will write objectives in behavioral terms.

a) objectives describe observable pupil behavior
b) and describe conditions under which pupils will demonstrate behavior
c) define acceptable levels of pupil performances

e.g. Level 1: Able to write behavioral objectives which describe both simple and complex levels of cognitive behavior.
e.g. Level 2: Able to write behavioral objectives appropriate to each level of the taxonomy of cognitive behavior.
e.g. Level 3: Enable beginning teachers to write objectives to Level 1 standard.

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*One of six work conference groups.

Evaluation criteria for the teaching competency, writing behavioral objectives:

> An objective is one of a set of objectives which samples both simple and complex behavior . . . both cognitive and objective behavior, etc.

*Objective should describe significant pupil behavior:*
e.g. Elicit pupil behavior which is evidence of evaluative thinking–

1) Pupils state a problem or phenomenon to be evaluated
2) Pupils state criteria for making judgement
3) Pupils test criteria by judging the problem
4) Revise criteria
5) Formulate judgement

Specifying component objectives within a general objective for teacher education:

*An objective is: Adjust instruction for individual students–Components of the objective–*

1) State objective of instruction which will then be modified for individual learners
2) Identify pre-requisites which students will need to succeed
3) Design means for assessing these pre-requisites
4) Administer the means (instruments)
5) Modify the objectives for different individuals

Then, what experiences would help beginning teachers develop and improve these performances:

> Generally, relate closely, in time and space, academic study about the performance to actual practice of the performances e.g.–

a) Look at and stimulate practice of available assessment instruments, then–observe expert teacher in school administer the same instruments.
b) Read and simulate practice of different types of questions, then–Try asking questions of children in order to determine informally how many children have necessary pre-requisites before beginning on actual unit of work.

*Sub-group Tasks*

Given a knowledge of principles of child growth and development and of grouping the teacher is able to set up a wide range of learning experiences for both groups and individuals that include cognitive, affective and psycho-motor domains.

1. *What conditions shall we specify to indicate how or under what circumstances the behavior will be performed? (tools, limitations, etc.) Description of "normal", "mean", "average" . . . .*

   Given a satisfactory classroom environment
   Variables within "satisfactory"
   - a. Number in class
   - b. Facilities
   - c. Supplies and equipment
   - d. Planning, conference time
   - e. Students who have no education, physical, or psychological problems to the degree that they are unable to learn in a classroom setting
   - f. Educational philosophy—personal, district, community—that permits
   - g. Aides, paraprofessionals, lay-help

2. *What criteria shall we specify to indicate "successful" performance of behavior? e.g. It occurs what percent of the time? With what % of the pupils? Does it always happen, is always evident?*

   The teacher exhibits the following behaviors in planning for large and small group activities:
   - a. Writes plans in behavioral terms indicating levels of the cognitive, affective and psycho-motor domains;
   - b. Provides for individual differences through small groups or industrial instruction;
   - c. Uses positive, immediate reinforcement;
   - d. "Capitalizes on her awareness" of attending behavior;
   - e. Uses evaluative feedback to modify instructional goals.

3. *What are the pre-requisite learnings (or entry behaviors) needed to accomplish the performance goals?*

   The teacher in her pre-requisite learnings is able to:
   - a. Write lesson plans which over a period of time give students the experience of all three levels—cognitive, affective, and psycho-motor domains.
   - b. Has knowledge in the basic curricular areas.

## Exploratory Examples

As a result of inservice training the staff teacher will be able to:

1. Set up learning experiences which will result in critical thinking (as

defined below) being evidenced in children's written and oral expression.

2. Have ability to use a variety of tests, e.g., (a) Standardized tests, (b) Informal tests, (c) Teacher-made tests in order to diagnose learning needs and to provide feedback on the effectiveness of instruction. Demonstrate the use and application in teaching of a wide variety of evaluative techniques. Knowledge of and ability to use a variety of tests: standardized, district, informal, reading inventory, teacher-made test.

Suggested tasks are those related to:

- Sensitivity
- Critical thinking
- Child-development
  - Cognitive
  - Affective
- Receptivity to feedback
- Knowledge of new tools
- Writing behavioral objectives
- Facilitating learning
- Evaluation

The following inservice offerings should be available to staff teachers:

1. Micro-teaching
2. Mager and Bloom
3. Bruner
4. Interaction analysis
5. Inquiry
6. Sander's Categories of Questions
7. Observations

### *Writing About M-STEP*

Mrs. Nedra Slauson, Editorial Assistant for the Washington Education Association, was employed to study the work of the three M-STEP projects, and to write her candid perceptions of what she found had occurred and what the situation was as of December 1968. Her unedited reports are included in the final report.

A number of conclusions can be drawn from reading the Slauson papers which may be helpful to persons planning teacher education projects.

1. Although the concept of pre-hiring seems to be good theoretically, accepted patterns of the university and the prevailing life styles of college-age youth militate against success in having college students obligate themselves to post graduate situations one or two years before graduation.

2. In order to succeed, pilot projects in teacher education require extra investments of staff time and energy. Such extra investment can be

expected and obtained in the short run by asking volunteer, dedicated professionals to give their services above and beyond the call of duty. In projects extending over several months or years, however, extra staff time and effort must receive remuneration.

3. The universities and school systems (with one or two exceptions) did not realize (nor did the M-STEP director) the amount of staff time and resources required for carrying forward college-school system cooperative enterprises.

4. Although participants expressed disappointment in the fact that M-STEP projects did not achieve all they thought they would, most felt their participation and involvement was beneficial and that their program was superior to the prevailing program at the college or university to which they were affiliated.

5. A full-time coordinator for each project was needed, someone to whom the participants could turn at any time, someone who could arrange individual and group experiences, someone who could follow-up on arrangements, someone who could give supportive feedback re participant activity.

6. In school systems where teacher-administrator communication is complex or difficult, pilot project plans need to be cleared with teachers as well as administrators, beforehand.

7. The time and energy required for travel is a key deterent to success in college-district cooperative programs. Continued contact by students and faculties, college to district, district to college, requires extra expense and time on the part of all concerned.

8. In addition to a commitment to collaborate and the necessary staff to supervise and coordinate activities, college-district program planning needs to proceed far enough that: (1) a descriptive process of how further planning and coordination will be carried out, guaranteeing appropriate representation of the interested parties (including students); and (2) responsibilities for doing each task are assigned or delineated—so that responsibilities will not "fall between the cracks."

## WEST VIRGINIA M-STEP
## REPORT OF SHORT-TERM PROJECT

### *Additional Centers are Imminent*

Experience with the original Pilot Center for Student Teaching, and its outgrowth, the Kanawha County Student Teaching Center has resulted in West Virginia's continued commitment to the Center concept in providing laboratory experiences for the state's student teachers. The Division of Teacher Preparation and Professional Standards of the West Virginia Department of Education received additional funds from ESEA - Title V, administered through the M-STEP Project, in order that other areas of the state might be informed regarding the experiences resulting from the Pilot Center and the establishment of the Kanawha County Center. These funds made possible numerous activities and a series of meetings involving institutions in the state which prepare teachers, and the public school systems which cooperate in their student teaching programs.

One such meeting (November 4, 1968) involved two state colleges—Bluefield State College at Bluefield, and Concord State College—at Athens, and leaders from three county school systems cooperating with the college's student teaching programs: Mercer County, McDowell County, and Tazwell County, Va. The inclusion of the last named school system raised interesting possibilities with reference to interstate involvement in teacher education, with, of course, its attendant difficulties. Interest in the possible formation of a center involving the above named colleges and school systems was indicated. The prospect of multi-county as well as multi-institutional involvement in a Center for Student Teaching poses complexities which will require a great amount of understanding and cooperation if a successful Center is to become operational. Resource personnel for the meeting included Dr. James D. Thomas, Director of the Division of Teacher Preparation and Professional Standards, Joseph E. Flaherty, Coordinator of Preservice Education, Mrs. Kathryn Maddox, Coordinator of the Kanawha County Student Teaching Center, and Lucille Armstrong, Social Studies Supervisor for Kanawha County Schools.

### *Recent Action—A New Center?*

A major obstacle to a more rapid implementation of student teaching centers had been a legal problem which prevented fiscal arrangements between public schools and colleges for student teaching experiences. The passage of permissive legislation to permit public schools to contribute to support of student teaching has resulted in Mercer County, led by Superintendent W.R. Cooke—taking active steps to establish a Center Advisory Committee, planning toward the employment of a Center

Coordinator, and agreeing to submit a proposal for fiscal aid to the Center to the Board of Education of Mercer County.

Tentative plans call for exploring the feasibility of establishing a student teaching center involving two state colleges—Concord and Bluefield, and two or three county school systems—Mercer, Tazwell County, Virginia, and possibly McDowell County. As was commented on earlier, the possibility of interstate cooperation in the operation of a student teaching center raises interesting and perhaps knotty questions.

In November 1968, representatives of the institution placing student teachers in schools of Wood County, members of the administrative staff of the Wood County Schools and State Department of Education personnel concerned with teacher education met in the offices of the Board of Education in Parkersburg. Institutions utilizing the Wood County Schools in their student teaching programs were represented. Included were Marietta College and Ohio University, two out-of-state institutions, as well as West Virginia University, Glenville State College, and Marshall University. West Virginia Wesleyan was also represented at the meeting, since that institution planned to begin placing elementary student teachers in Wood County. Two members of the Division of Teacher Preparation and Professional Standards, the Director of the Division, along with the Coordinator of Preservice and Continuing Education were present. The Wood County Superintendent of Schools, along with his Assistant Superintendent, and the Director of Personnel, acted as hosts for the meeting.

The preliminary meeting which emphasized a plea that the teacher education institutions "get together" resulted in a second meeting late in 1968. This meeting resulted in the establishment of the Wood County Student Teaching Center Advisory Council, composed of one representative from each of the institutions, three members of the Wood County staff, and the Coordinator of Preservice Education as a State Department member, ex-officio. Probably the most encouraging development resulting from the Center concept has been the recognition of responsibility for teacher education by the public schools, along with the willingness of colleges to admit into full partnership the public schools in the preparation of teachers.

### *A Multi-County, Multi-Institutional Center*

Concern was expressed by Directors of Student Teaching of four private institutions located in fairly close proximity to each other regarding such problems as student teacher placement, supervising teacher honoraria, and scheduling in three small county school systems and one fairly large urban system. Two state-supported institutions also placed student teachers in the area, adding to the issues already mentioned.

The State Department of Education, through its Coordinator of Preservice Education suggested a meeting of Directors of Student Teaching, and Chairman of the Departments of Education of the respective institutions to discuss the feasibility of utilizing the Center approach in attempting some solution to the obvious problems. At the very least it was suggested that an Advisory Committee composed of representatives from the "competing" institutions, and, hopefully, representatives from the public school systems involved, could review and suggest solutions for problems where simple cooperation seemed to be all that might be necessary. Subsequently in 1969 a meeting was held on the campus of Alderson-Broaddus College, one of the church-related institutions involved.

Others in attendance represented West Virginia Wesleyan College, Salem College, and Davis & Elkins College, all privately controlled, and Fairmont and Glenville State Colleges—two state supported institutions.

The colleges represented agreed that a cooperative approach to matters regarding student teaching was imperative and that at the very least, an Advisory Committee of college and public school people was necessary. It was suggested that in the low-density counties a committee might be all that was needed, while in the larger urban county a Center for Student Teaching might be a practical undertaking.

### *Multi-State, Multi-Institutional Center?*

Three institutions in the northern "panhandle" of the state have expressed interest in an exploratory meeting to discuss possible establishment of a Center for student teaching. Wheeling College—a Jesuit liberal arts college with a newly instituted, small, teacher preparation program for secondary teachers; Bethany College, a private church-related institution of long standing in West Virginia; and West Liberty State College, a state-supported college with a strong teacher preparation program, are located within a 20 mile proximity to each other. The prospects for a cooperative venture in student teaching are interesting here, especially since three states' public school systems—Ohio, Pennsylvania, and West Virginia—are now utilized in the institutions' student teaching programs. Plans are now being made for an initial meeting of persons representing the above described interests and is being coordinated by the personnel of the Division of Teacher Preparation of the West Virginia State Department of Education. An exciting prospect for a multi-state, multi-institutional, multi-school system cooperative venture in preparing teachers is in the offering.

### *Regional and State-wide Meetings*

The Annual Conference of West Virginia School Administrators at

Jackson's Mill, sponsored by the State Department of Education, afforded an opportunity for the Division of Teacher Preparation to bring the state superintendents up-to-date on activities regarding student teaching in West Virginia, M-STEP activities in the state, and the center concept for student teaching and its affect on the public schools. It was pointed out by Dr. Thomas in his remarks to the public school leaders that theirs was a joint responsibility, along with college representatives, to select suitable schools for use as centers for student teaching. To be selected as a center for observation and student teaching, a school shall:

1. Have administrative and instructional leaders at the county level who are genuinely interested in the preparation of teachers and who will cooperate with the college in the teacher education program.

2. Have a faculty composed of competent teachers who have a high sense of commitment to the values which give integrity to teaching and a personal desire to participate in the student teaching program.

3. Have a principal and faculty who will accept the responsibility of interpreting to the community the importance of the school's role in the improvement of public education.

4. Include those grades, courses, and special groups that a student teacher may be required to teach according to the program he is completing and the certificate for which he is working.

5. Encourage experimentation and innovation.

6. Meet satisfactory standards of safety heating, lighting, and ventilation.

7. Be equipped with an adequate library and up-to-date instructional aids (e.g., maps, globes, charts, audio-visual equipment).

8. Hold first class accreditation by the State Department of Education. In selecting secondary school centers, preference shall be given to schools which are accredited by the North Central Association of Secondary Schools and Colleges.

The staff of the Division of Teacher Preparation of the State Department of Education took part in a meeting of the Academic Deans of West Virginia colleges and universities at Morris Harvey College in Charleston called by the State Department of Education to discuss educational matters. The center concept, which encourages cooperation between public schools and colleges in order to provide more meaningful laboratory experiences for student teachers, and the permissive legislation to make such centers possible, was discussed by Assistant State Superintendent, John T. St. Clair and Division Director, James Thomas.

During a meeting of the Advisory Council for Teacher Education, a duly constituted committee which functions as adviser to the State Department of Education on teacher education affairs, the Coordinator of Preservice Education was privileged to address remarks concerning the role of the State Department in supporting the Center concept for student teaching in West Virginia. It was pointed out that West Virginia is actively and positively encouraging public and higher education to move toward a closer cooperation in the provision of laboratory experiences in student teaching.

The Kanawha County Student Teaching Center and the State Department of Education acted as hosts to a number of college and public school people, student teachers, supervising teachers, administrative and supervisory personnel of the Kanawha County Schools, and members of the State Department of Education at a meeting in Charleston. A consultant, John Withall of Pennsylvania State University, demonstrated verbal and non-verbal communications patterns often used by teachers in the classroom. Dr. James D. Thomas of the State Department of Education discussed the Center concept for providing laboratory activities in teacher education, and Superintendent of Kanawha County Schools, Walter Snyder, remarked on his school's systems commitment to a meaningful student teaching experience. Great interest in the Student Teaching Center seemed to be generated by those not familiar with the Kanawha County Center.

The West Virginia Unit of the Association for Student Teaching met on the campus of Fairmont State College on November 6-7, 1968. At this meeting the State Department of Education made it possible for representatives of the Kanawha County Student Teaching Center Advisory Committee and the main speaker to present the Center concept to the assembled group. A formally prepared presentation was delivered by the Coordinator of the Kanawha County Student Teaching Center. It seemed obvious that the Center concept had met with approval from school–especially building–administrators, and that provision for student teaching through the Center, utilizing the leadership role of the Coordinator, was a much more acceptable way of providing for the student teaching experience in contrast to the first come first served manner of assignment of student teachers heretofore being engaged in by college directors of student teaching.

An opportunity was presented at the Association for Student Teaching meeting at Fairmont for members of the Division of Teacher Preparation of the State Department of Education to interest a number of college and university directors of student teaching in arranging to meet together in Charleston in December.

Representatives from each of the 17 colleges and universities engaged in the preparation of teachers were in attendance at the meeting. The meeting was highly successful and resulted in the formation of a permanent Council of Directors of Student Teaching of West Virginia's colleges and universities. The newly formed organization actively supported the enactment of the permissive legislation previously cited.

The need for personnel from all the states' teacher preparation institutions to assemble occasionally and share ideas and concepts was heartily subscribed to by the personnel involved. The Council of Directors of Student Teaching of West Virginia university and colleges scheduled its third-day meeting for April 8-9, 1969. It seems that this cooperative approach to consider student teaching activities has become a permanent organization in teacher education in the state.

### *Regional Meetings*

During regional meetings, opportunity is provided for the Coordinator of Preservice Education to address the educators present regarding the thrust of preservice laboratory experiences in teacher education. Emphasis is given by the speaker on the cooperative approach to student teaching which is gaining wide-spread acceptance in West Virginia. The presentation includes an overview of the M-STEP Pilot Center, the outgrowth of M-STEP as it is practiced in one operating Student Teaching Center, and the investigative activities going on in other areas of the state regarding the center concept. Discussion of the supportive nature of both state department and legislative activity occurs, and an attempt is made to generate interest in teacher education, new directions in preparation programs, and pre-professional laboratory experience in those educators present.

In short, a deliberate effort is made to establish a climate in every area of West Virginia for the acceptance of new, innotative, and imaginative programs in teacher preparation and—especially where public schools are well represented—the student teaching center concept for provision of laboratory experiences for West Virginia's student teachers.

## CONCLUSION

It is the conclusion of the Coordinator of Preservice and Continuing Education that the M-STEP Short Term Grant has been the vehicle by which a climate for acceptance of the Center concept for student teaching in West Virginia has been established.

College and public school personnel have shown increasing interest in a cooperative approach in implementing student teaching practices, and the Coordinator has received even warmer reception in his attempt to inform persons interested in and responsible for teacher education of the new and innovative activities occurring in the preservice preparation of teachers.

These are exciting times in education in general, in teacher education in particular, and in the laboratory phase of teacher preparation to be specific. It is the opinion of the Coordinator that M-STEP has had a definite impact on the imaginative preparation of teachers, and the M-STEP Short Term Grant has had a lasting effect on teacher preparation in West Virginia.

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Explanations by seven states of plans for post-project action will be continued in Chapter XIII.

# Chapter XIII

## Horizons Ahead!

## A Seven-State View*

Those who designed M-STEP did not conceive of the project as an activity of limited duration but rather as a stimulant on the teacher education scene whose impact would be felt in the years following termination of the project. Although the M-STEP program comes to its official close on June 30, 1969, personnel in the seven project states have planned continued support of the M-STEP concept through follow-up activities that promise to further the ideals initiated in the original compact.

The following sections relate briefly these projected programs and activities of the respective departments of education in the seven states. The years ahead will truly test the immortality of a vision.

### FLORIDA

As a result of its experience with M-STEP, Florida has identified four major areas of emphasis for strengthening teacher education in the state. The areas are (a) obtaining better information on which to base teacher education decisions, (b) making greater use of the approved program approach to preservice teacher education, (c) developing inservice programs which are more responsive to the needs of teachers, and (d) developing a stronger teacher education staff in the State Department of Education.

The Department has taken significant steps to obtain more and better information (on teachers and on schools) upon which to base decisions about teacher education. This information is of three types: status reports, projections of future personnel needs, and information on teaching vacancies and candidates. Through M-STEP, the Department developed techniques for computer analysis of State Department of Education files to provide status information on school personnel and programs. In addition, techniques were developed to provide the second type of information, projections of future personnel needs. The Department now has in operation a computer-assisted long-range planning model for simulating future personnel needs. This system makes it possible to view an infinite variety of changes in school programs or staffing patterns in terms of their effects upon personnel needs.

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*Director and Staff

The Department has also developed systems for providing up-to-date information on teaching vacancies and available candidates. Teaching vacancy information is submitted to the Department by local school districts. The vacancy file is maintained and updated by computer. The Department also maintains (manually) a file of persons seeking teaching positions in Florida. Preliminary work has been completed on a computer-based system for matching applicants with positions.

A second area of emphasis is the effective implementation of the approved program approach in preservice teacher education. State Board of Education regulations provide for the approval of teacher education programs which do not follow course by course the requirements that are stipulated in the certification handbook. Teacher education institutions are encouraged to make maximum use of their resources in developing the kinds of teacher education programs which they feel are true manifestations of their philosophies.

The State Department of Education staff works and will continue to work extensively with colleges and universities in developing approved programs. The staff also works with the Teacher Education Advisory Council in developing new sets of guidelines. These guidelines are intended to assist both schools and colleges in designing and evaluating teacher education programs (both preservice and inservice) for educational personnel in specific subject or service areas.

Inservice teacher education is an area of emphasis in which the needs for development were probably most pressing. The Department's efforts in this area have been of two types: the development and implementation of a system for approving inservice teacher education programs in local school districts comparable to the approved program approach in preservice teacher education, and the development of model inservice education components or "packages" which could be adapted for use in several different inservice programs. The Department has revised staff assistance to local school districts in planning inservice education programs. The Department also administers the approval of such programs. When programs are approved, participating teachers may have their teaching certificates extended (renewed) without completing additional college course work. The Department has sponsored three projects for developing inservice education packages.

A package consists of a set of objectives which describes fully what the package user will be able to do after successfully completing the package procedures; the appropriate procedures and materials for accomplishing each of the package objectives; and evaluation exercises or activities which can be used to determine when the package user has accomplished the package objectives. The packages relate to such teaching skills as using reinforcement, asking questions, control of participation, developing listening skills, and using audiovisual media in instruction. The next step in the development of these teacher training packages will be to conduct extensive field tests and to make necessary revisions. College personnel will participate in many of the revisions.

A final area of emphasis is in providing staff development for the teacher education staff in the State Department of Education. During and following its involvement with the M-STEP program, the Florida State Department of Education greatly expanded its teacher education staff. This group is attempting to work as a team to articulate preservice and inservice teacher education and to make it more responsive to the needs of the schools. The new staff members feel a need to improve their skills for working with one another, to become familiar with many possible techniques for accomplishing their objectives, and to think creatively about teacher education. To this end, a staff development project was conducted as Florida's final M-STEP activity.

## MARYLAND

During the three years which have passed since the first teacher education center in Maryland was initiated at Montgomery County's Kemp Mill Elementary School in 1966 as part of the Maryland M-STEP program, the teacher education center movement has grown tremendously. As of May, 1969 five colleges and universities are operating centers in the State. These institutions are: American University, Coppin State College, George Washington University, Towson State College, and the University of Maryland. Also, five Maryland public school systems are cooperating in teacher education center programs. (Baltimore City, Baltimore County, Howard County, Montgomery County, and Prince George's County.)

From the one elementary school which was the site of the first teacher education center in Maryland, the number has grown to thirty Maryland elementary schools and seven secondary schools. Maryland colleges cooperate with four elementary schools and three secondary schools in the District of Columbia, making a total of forty-four public schools which are involved with Maryland colleges in teacher education centers.

Another development which offers hope for further spread of this movement is the recent legislative proposal of the Maryland State Department of Education to finance a State program in student teaching. Several features of that program grew out of the experience at the Maryland M-STEP Center. The State program proposes funds for inservice experiences for supervising teachers and sets up a plan providing financial assistance to school systems to administer their student teaching programs. As a further aid to the teacher education center and its improved program, the public schools' portion of the coordinator's salary would come from State funds. With this kind of support, teacher education in the State would be greatly improved.

## MICHIGAN

During Michigan's involvement with M-STEP, the Department of Education exerted considerable effort toward the organization of regional councils for the joint administration of college and university student teaching programs in the field. Nine regional committees were formed. A reaction panel acted as a statewide coordinating and advisory body.

With the withdrawal of federal funds for the project, the reaction panel reorganized itself as a self-perpetuating coordinating body, representative of regional interests, and now has requested to be attached to the State Advisory Committee on Teacher Education and Certification as an Ad Hoc Sub-Committee.

Regional councils continue to function effectively by working toward regional agreements and understandings regarding the local organization and administration of student teaching programs in public school districts, toward the cooperative improvement of such programs, toward regional standards for admission to student teaching, toward agreements about the qualifications of supervising teachers and planning for the training of supervising teachers and college supervisors.

The Department of Education, no longer in an administrative position with regard to this program, has continued to act as a consulting and information providing and disseminating agent. The Department will continue to serve as a distribution agency for reports and publications, and will keep regional councils and the reaction panel informed as to significant developments from any source.

It will also provide such impetus as may be possible toward the solution of problems in the area of student teaching. At this point, some of these problems have been identified as follows:

1. The clarification, probably by Statute, of the legal responsibilities and liabilities of student teachers, teacher aides, supervising teachers, and school district administrators, where such liabilities relate to the student teaching program.

2. Realistic funding, by means of an amended State Aid Act, of student teaching programs operated by local school districts.

3. The continued development on a regional basis, to be followed where necessary by statewide standards, for the selection of cooperating schools, supervising teachers, and college supervisors in the student teaching program.

4. The stimulation of inter-institutional cooperation and program development among teacher education institutions; the organization of consortia for teacher education research, and for experimental teacher education programs.

5. The motivation of local school districts and teacher education institutions for the use of instructional media techniques in teacher education.

6. Development of meaningful programs for the education of teachers of the disadvantaged, particularly in urban settings; the development of evaluative criteria applicable to such teacher education programs and to public school programs in ghetto situations.

7. Policy development as to the role of public school districts in teacher education, particularly in student teaching.

## SOUTH CAROLINA

The Office of Teacher Education and Certification of the South Carolina State Department of Education is actively engaged in the improvement of student teaching and teacher education programs. This leadership will continue on an even larger scale as the resources of M-STEP are utilized by the colleges and universities in the state.

An M-STEP proposal designed to produce resources which would help meet the needs brought to light by M-STEP was submitted. It is hoped that the Office of Teacher Education and Certification will be of assistance to colleges as they initiate the development of video and written resources in these areas of teacher education: (1) coping with classroom behavior; (2) developing videotaped models of the teaching tasks.

A further extension of leadership will be evidenced as the Education Professions Development Act, Public Law 90-35, becomes a reality in the state.

Certainly M-STEP has engendered expanded interest in the use of video processes in teacher preparation programs. Two proposals submitted by the

Columbia College are cited as evidence of utilization possibilities for video processes.

The improvement of teacher training programs must include the upgrading of supervising teachers, and M-STEP has sponsored two conferences relative to the college supervisor and supervising teacher. A proposal submitted by Clemson University is cited as an example of the increased interest in supervision.

Several proposed projects have been submitted by South Carolina teacher preparation institutions. Among them are:

1. A proposal submitted by the Columbia College, Columbia, South Carolina, entitled "New Concepts for Training Speech Correctionists," which is designed to develop a library of video-recorded teaching materials to incorporate into the teaching of audiology. It is hoped that by utilizing visual demonstrations of case studies, significant improvement in instruction will ensue.

2. The Columbia College, Columbia, South Carolina, has requested funds for a proposed "Teacher Training Project in Early Childhood Education." The stated purpose of the project is to develop new instructional material and techniques for training teachers in early childhood education. The designed project will include the utilization of videotaped materials and micro-teaching techniques in extensive practicum experiences.

3. Clemson University, Clemson, South Carolina, has submitted a proposal entitled "Institute for Advanced Study to Improve the Qualifications of Supervisory Teachers." Under the proposed project, Clemson plans to offer a three-course graduate sequence of specialized education for both elementary and secondary supervisory teachers. The stated purpose of this program is to provide supervisory teachers with skills, knowledge, and understanding.

As the M-STEP program draws to its official close, South Carolina identifies the following needs in its teacher education curricula:

1. Institutional programs for the training of student teachers in working across biracial lines.

2. Institutional programs, particularly practicum, in working with the disadvantaged. It is hoped that such programs would involve not only student teachers but also their college professors.

3. Institutional preservice programs designed to include more work with children.

4. Establishment of programs in teacher education on which research is already available, putting into practice those innovations and experimental programs based on research.

5. Realistic funding of student teaching programs and programs for training of supervising teachers.

6. Further discussion and clarification of the roles of those institutions and persons involved in the student teaching process.

7. Development of minimum standards for the following:
   a. Cooperating schools
   b. Supervising teachers
   c. College supervisors

8. Continued and expanded dialogue and cooperation among teacher training institutions.

9. In-depth training of supervising teachers in supervision.

10. Increased utilization of instructional media and techniques in teacher training.

11. Interdisciplinary approach to teacher training, as opposed to "course and credit counting."

12. Increased personnel for the State Department of Education and realistic salary scales for these persons.

13. Expanded inservice education for teachers:
    a. Subject areas
    b. Working with student teachers
    c. Alleviating the differences in socioeconomic levels between teacher and students.

## UTAH

Many of the M-STEP initiated activities are being carried on by the various teacher preparation institutions in Utah. At Brigham Young University, a small building just off campus has been remodeled and dedicated for use in experimental teacher education programs. The facility includes a well-equipped micro-teaching studio, classroom, study, and office space.

Both the University of Utah and Utah State University have established videotaping and micro-teaching studios and are continuing to acquire equipment needed to expand the new programs. Weber State College and the College of Southern Utah have obtained videotape recorders and auxiliary equipment and are doing experimentation with micro-teaching.

A number of preparing institutions and a few school districts in Utah are making good use of videotapes, films, and other materials produced as a result of the M-STEP project. Many requests for these materials come in from other states, most notably from the M-STEP states.

The Utah State Board of Education will continue to coordinate programs through the Division of Teacher Personnel and will continue to encourage promising innovation in teacher education programs. Through the existing statewide Advisory Committee on Student Teaching, institutions will be encouraged to discuss program changes and share ideas in an attempt to mount a continuing effort in the quest for quality in teacher education in Utah.

A number of projects submitted for consideration under the Education Professions Development Act show a definite relationship to M-STEP activities and will draw on M-STEP experiences as the phase-in of the new projects is accomplished.

As this volume goes to press, Utah cites the following needs and goals in the state's teacher education practices:

1. More clearly defined and delineated roles and responsibilities for teachers, administrators, and other professional and auxiliary personnel.

2. Adoption of performance criteria to emphasize the production of teacher competence.

3. Use of an improved reliable instrument for analyzing student teaching as well as regular teaching performance.

4. Preservice and inservice programs geared to the needs of individuals.

5. An acceptable program for preparing classroom teachers to assist in developing strong candidates for entering the teaching profession.

6. Greater public school commitment to teacher preparation.

7. Improved cooperation between the preparing institutions and public schools in the joint search for quality and good practice.

8. An adequate bank of videotapes and single-concept film loops for use with student teachers and with teachers involved in inservice training programs.

## WASHINGTON

Although regular federal support for M-STEP officially came to an end on June 30, 1969, the work which had been started was not complete on that date. The three pilot projects in which collegiate and school system teacher education activities were articulated had not been finished. Graduates of the M-STEP Bellevue-Washington State University preservice program had been employed as regular teachers by Bellevue for the 1968-69 school year, but their program was incomplete. Faculty members of WSU had agreed to assist personnel of the Bellevue schools in providing an appropriate inservice program for the M-STEP teachers during the 1968-69 and 1969-70 school years. Participants in the Edmonds-Western Washington State College M-STEP were seniors during the 1968-69 academic year; participants in the Seattle-University of Washington M-STEP were juniors. M-STEP activity would continue until 1972.

The Bellevue schools indicated that they would conduct research which would compare M-STEP teachers with non-M-STEP teachers. Personnel involved with the other projects said that they planned to live up to the M-STEP commitments originally made to participants, including the appraisal of performance. Results of these studies were to be shared among the M-STEP states.

In September 1968 the State Board of Education adopted revised standards of preparation for special service personnel (educational staff associates) based upon the *Fourth Draft*. This action marks the first time a state has adopted a systematic, performance-based, program approval approach to certification. Adoption of similar standards for teachers and administrators is contemplated in the near future.

As M-STEP came to a close, personnel involved in teacher education in the State Department of Education began work on the Washington TTT Project (the Training of Teacher Trainers) which had received approval of the U.S. Office of Education. It was believed that the state clearly could test the feasibility of the ideas presented in the *Fourth Draft* through the TTT Project. As submitted, the TTT Project called for the establishment of some fifteen pilot projects within the state to demonstrate the worth of the new ideas.

The M-STEP Coordinator, in cooperation with the superintendents of the Bellevue, Edmonds, and Seattle schools, developed a proposal and submitted it to the U.S. Office of Education for funds under the Education Professions Development Act (PL 90-35) for the purpose of reducing the teaching loads of M-STEP participants during their first year of teaching. This project was not approved.

A new era for teacher education was beginning just as M-STEP was coming to a close. New mechanical technology, especially the videotape recorder, was providing an opportunity for stop-action analysis of teaching; new process reporting schemes, especially the Flanders interaction analysis, was providing a simple way for self-analysis and feedback; new management techniques, especially applications of systems thinking—PERT, PPBS, etc.—had created a way for relating elements of complex activities with other elements using performance objectives; existentialism, especially as it was expressed by militant college students, focused attention on relevance; a reassessment of the meaning of democracy, especially as the meaning of individualism was applied to urban living, caused students to realize that they had to have a "piece of the action"—a modern way to talk about pupil-teacher planning.

M-STEP provided an opportunity for the Office of the State Superintendent of Public Instruction to take advantage of these forces and to assume leadership for change. Assuming leadership for change is never easy; it is fraught with anxieties and mistakes; it requires boldness and an adventurous spirit on the part of those involved. Without question, M-STEP in Washington resulted in a significant step being taken toward the creation of a new context for teacher education in America; M-STEP became a real adventure.

The hard, long task of implementing a new set of ideas now faces the state.

## WEST VIRGINIA

In West Virginia, the Pilot Center for Student Teaching was the organizational structure for the implementation of the state's M-STEP program, which was operated under M-STEP for two years. Because of the state's continuing commitment to the Center concept as a means for the improvement of laboratory experiences in teacher preparation, plans were made to establish a student teaching system which would be an outgrowth of the M-STEP Pilot Center for Student Teaching.

During the 1968-69 school year, as a phase-in of state operation and a phase-out of federal support, the Kanawha County Center for Student

Teaching came into operation exclusive of M-STEP sponsorship. The same five institutions that participated in the original pilot project—Marshall University, Morris Harvey College, West Virginia Institute of Technology, West Virginia State College, and Concord College—continued their involvement with the Kanawha County Public Schools in their commitment to student teaching.

The Coordinating Committee continued as the administrative arm of the new Center and arranged for the employment of a full-time coordinator to carry out the duties of the former M-STEP director. The coordinator is responsible, under the general direction of policies approved by the Coordinating Committee, for the placement of all student teachers within the Center; provides for orientation procedures by which student teachers become familiar with the Kanawha County Schools and, in particular, their own assignments; and acts as a resource person and liaison for both supervising teachers and college directors and supervisors of student teaching. In effect, the coordinator is the on-the-job, day-to-day representative of the student teacher, the supervising teacher, and college supervisor, the participating institutions, and the Kanawha County schools.

Other institutions that desired to become a part of the Center were permitted to join the Center under the same arrangements provided for the original participating institutions. In 1969, West Virginia University became a participant in the Kanawha County Center, placing a number of student teachers through the Center coordinator.

That quality student teaching experiences are most vital and that the public schools have a responsibility to help provide for these experiences has been demonstrated by the Kanawha County public school system to the extent that it has agreed to underwrite half the costs of the Kanawha County Student Teaching Center for the school year 1969-70. The amount to be contributed by the Kanawha County schools will be in excess of $12,000.

During 1968-69 the Division of Teacher Preparation and Professional Standards of the West Virginia Department of Education received additional funds from M-STEP under the provisions of Title V of the Elementary and Secondary Education Act in order that other areas of the state might be informed regarding the experiences of both the Pilot Center and the Kanawha County Center. These funds made possible numerous activities and a series of meetings involving institutions in the state which prepare teachers and the public school systems which cooperate in their student teaching programs. Tentative plans call for exploring the feasibility of establishing additional student teaching centers in the state, with each center involving two or three county school systems and several teacher preparation institutions. The prospect of a multi-county, multi-institutional center poses many complexities, however. Even more complicated is the prospect of establishing a multi-state, multi-institutional center. The Division of Teacher Preparation of the West Virginia State Department of Education is coordinating meetings involving representatives of three teacher preparation institutions in the state and three public school systems, one in Ohio, one in Pennsylvania, and one in West Virginia, which are now utilized in the institutions' student teaching programs. These respective institutions and public school systems are considering formation of a student teaching center modeled after the Kanawha Center.

The Division of Teacher Preparation, through the sponsorship of the State Department of Education, has organized many regional and statewide conferences as a part of the state's M-STEP follow-up (or outgrowth) activities. Participating in these conferences are such groups as school administrators, deans of the state's colleges and universities, college and public school personnel, student teachers, supervising teachers, and members of professional teachers organizations. A deliberate effort is being made to establish a climate in every area of West Virginia for the acceptance of new, innovative, and imaginative programs in teacher preparation, especially through laboratory experiences acquired in student teaching centers.

# Chapter XIV

## Facing the 1980's with Systems of Planned Innovation*

The teacher of the 80's, member of the electronic generation, will know who he is and why he wants to teach; will understand children because he's been exposed to so many live ones throughout his college training; and will have at his fingertips a battery of classroom techniques he's sure will work because he's tested them backwards, forwards, and sideways.

He will feel as much at home in the world of "micro" and "tele" as he does in the campus bookshop and will thread his way confidently through the alphabetical jungle of technology—CAI, IPI, CMI and all the rest of the shorthand lingo for the miraculous media.

He expects, and will probably find at his alma mater, open and closed circuit TV, instructional amphitheatres, laboratories and individual study carrels, multi-media lecture halls, dial access systems, multiple projection presentations, as well as tapes, slides, and software in heady abundance.

His best friend may be his computer which will teach him new knowledge, locate up to date information for him, correct his misconceptions, answer his queries—all the while keeping a stern eye on his progress.

He will be proficient at team teaching, having had ample opportunity at different points in his preparation to be an observer, an apprentice, or a practicing member of an instructional team.

But he will by no means have been swallowed up in "groupthink." In fact, as his college training proceeds, he will be given increasing autonomy and responsibility to plan and manage his own learning, assess his own progress, make his own decisions, test out a variety of teaching strategies under real or almost-real conditions and then, in that moment of truth, put them on the block to be criticized by himself, his fellow student-teachers, sometimes his "pupils," and the faculty.

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*By Staff

His learning will not be confined to the halls of ivy but will fan out into the community. Chances are that if he plans to teach in the inner city, he will have had some eyeball-to-eyeball confrontation with its problems.

He will be able to take pride in knowing that he has had to prove himself, through careful and continuous screening, to get into the teacher education program in the first place and that his performance, aptitude, personality, and teaching "behaviors" have had to pass muster up and down the line to enable him to stay in.

Signs that this young paragon of professionalism awaits us just around the corner are unmistakable in the trends sweeping the field of teacher education.

The 1980's teacher will be the offspring of the marriage between the new research and ideas of learning and the new technology. "Innovations" in learning theory and "multi-media" began first to date each other in piecemeal experiments here and there during the 60's and, even in some places, to go steady. It was not until late in the decade, however, that the experts perceived that modern research and modern technology must be wedded completely, if a radical re-design of teacher education were ever to emerge.

One large straw-in-the-wind was the call in 1967 by the Elementary and Secondary Research Branch of the United States Office of Education for teacher education institutions of this country to design and submit entirely new "models" for educating elementary school teachers which might eventually be developed into showcases for others to follow.

Even earlier—in 1965 and the beginning weeks of 1966—the idea of M-STEP (the Multi-State Teacher Education Project) began to dawn in a few professional minds, and soon teacher education personnel in seven widely separated states started an intensive three-year study of what top-level teacher education should be. Beyond the "what" aspects of the problem, M-STEP designers were even more interested in the how process. They laid out plans whereby entire states could martial their professional resources and design entirely new programs and revolutionary segments of programs. As at least one state superintendent of schools put it, "We are trying to find out if seven states working together can progress farther and faster than each state working alone." They wanted to design systems of planned professional invention which would "perpetuate a continuum of change" through the years and the decades ahead.

They knew the colleges and universities, the professional organizations, the schools and state education agencies possessed the necessary talent to transform such dreams into reality.

The time was ripe. Research Professor Nicholas A. Fattu of Indiana University, in an early report* on the USOE Research Bureau project, pointed out that during the 60's, teacher education was in a period of ferment. Many innovations were churned up, including: "emphasis on performance and competence as opposed to credit accumulation criteria; programmed instruction; behaviorally-stated goals; performance testing; individualized instruction, including IPI (Individually Prescribed Instruction), CMI (Computer Managed Instruction), CAI (Computer Assisted Instruction), R and D (Research and Development) units, and management "systems"; team teaching, sensitivity training, micro-teaching, flexible scheduling, interaction analysis; gaming and simulation; clinical professors, clinical work, internships, residencies, and on-the-job training." To these we could add micro-class, mini-course, program re-cycling, professional "half-life", portal schools, differentiated teaching staff, teaching strategies, and still others.

All of these, says Fattu, seemed to have something to contribute toward the improvement of teacher training within the carefully structured research situation where all other things were equal. But in real-life teaching, all things "are not quite equal," so the practical task was not to test a single innovation but "to develop a new and significantly improved means for educating elementary teachers using ALL of the relevant innovations one has on hand or can invent."

In other words, there was to be an end to tinkering. Programs must undergo a complete overhaul. Better still, creative minds were to design entirely new systems of professional education, innovative from foundation to superstructure, based upon a rapidly growing body of knowledge in the behavioral sciences, educational technology and the kindred arts. If tomorrow's teachers were to perform significantly better, said the experts, they had to be prepared by a comprehensive preservice and inservice program, broader than the campus confines, longer than the four-year span of college, and incorporating the best that was known of innovative theory and technology.

Phase I of the USOE Bureau of Research project brought in some 80 separate proposals which were rigorously screened. From those, nine proposals were approved, funded, and given the job of setting educational specifications for a new system of education for prospective elementary school teachers. These nine, which were to serve as "models" to other institutions seeking radical revision of their own programs, were produced by Florida State University, University of Georgia, University of Massachusetts, Michigan State University, Northwest Regional Education Laboratory, Consortium of State Universities of Ohio (through the University of Toledo

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*Nine Proposals for Elementary Teacher Education; A Description of Plans to Design Exemplary Training Programs.* ERIC, No. ED 018677.

Research Foundation), University of Pittsburgh, Syracuse University, and Teachers College, Columbia University.*

Several major themes are sounded again and again in these "model" programs. Among the recurrent convictions revealed by the proposal writers are these: 1) that only persons with demonstrated ability and interests should be admitted to the teacher education program and that the prospective teacher's first two years in college should give him many opportunities to arrive at an intelligent decision as to whether to continue it it; 2) that there needs to be cheek-by-jowl continuing cooperation between the University, the public schools, and the State Department of Education to ensure that the student's preparation is meaningful, comprehensive, and liberally laced with practice; similar harmony and close working relationships must exist between all departments and disciplines of the University itself; 3) that the student needs large doses of practice in actual teaching, under conditions as real as can be devised, much more than he needs "methods" courses or lessons and lectures from the faculty; 4) that the student must learn to develop cool self-objectivity and self-criticism so he can hold "his own behavior at arm's length and examine it as it bears on the classroom environment"; 5) that a teacher's learning never ends and that "preservice" training should be considered all of a piece with the "inservice" years of teaching; 6) that technology can be utilized to equip the student to become an "instructional manager" and "decision-maker," knowing exactly when to use which skills to meet the instructional goals and the needs of children; 7) that personal attributes of empathy, warmth, responsiveness, and ability to see another's point of view are as crucial as technical savvy in the classroom, and that these too can be honed through technology–micro-teaching, classroom observation, both live and videotaped, independent study, classroom simulation materials; 8) that the student can become much more responsible for managing his own learning and that the effective program is one that permits him to enter, advance, and exit at his own pace and on the basis of his performance, not on the number of course hours he's taken or the time he's spent on various subjects; 9) that the student should be confronted very early in his college career with opportunities to work with and to know young children for "reality testing" purposes; 10) that the institution must provide continuous monitoring of the student's progress—which in most cases will demand elaborate data storage and retrieval systems—and at designated points must provide careful "counseling out" and "exit" procedures for those who can't make the grade; and 11) that his training must include intimate knowledge of the environment in which he will eventually function as a teacher.

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*Titles of nine volumes which describe the approved proposals, and the institutional source of each, are listed below. The Elementary and Secondary Research Division of the United States Office of Education has distributed these volumes to the colleges of education of many universities. They may be available in the libraries of these institutions. They can be purchased from the Superintendent of Documents, U.S. Government Printing Office, and from ERIC.

*A Model for the Preparation of Elementary School Teachers,* Florida State University; *The Georgia Plan for Developing a Model System of Teacher Education,* University of Georgia; *A Proposed New Program for Teacher Education,* University of Massachusetts; *A Proposed New Program of Elementary School Teacher Education,* Michigan State University; *A Competency Based, Field Centered Systems Approach to Elementary Teacher Education,* Northwest Regional Educational Laboratory; *A Proposal to Develop Educational Specification for a Comprehensive Teacher Education Program,* Consortium of State Universities of Ohio (through the University of Toledo Research Foundation); *Educational Specifications for a Comprehensive Undergraduate and Inservice Teacher Education Program for Elementary Teachers,* University of Pittsburgh; *Specifications for a Model of Elementary School Teacher Education,* Syracuse University; *Specifications for a Model of Teacher Education and the Mechanisms for Bringing It into Existence,* Teachers College, Columbia University.

Addressing itself to the students' need for practice in teaching, Florida State University suggests that "professional education" and "methods" courses, as usually conceived, should be abolished and replaced by a variety of experiences related to classroom teaching.

"Study *about* teaching, *about* learning, and *about* child growth and development," say the planners, "cannot in themselves produce desirable teaching behaviors." Their design relies heavily on simulated experiences for trainees, including micro-teaching and much opportunity for self-criticism.

Some of the faculty members, says FSU, will not be "teaching" at all in the usual sense. They'll be designing experiences for the trainees and gathering materials for their use in such activities as micro-teaching, simulation, and videotaping. They'll also be planning classroom participation, as well as intensive and extensive student teaching. By planning experiences for the trainees to carry out rather than lessons and lectures, the instructors will "actively demonstrate commitment to teacher behaviors which emphasize *student* rather than *teacher* involvement in learning activity."

Because no one type of teacher behavior is best for all children in all situations, FSU will offer the beginners a variety of teaching strategies and styles and require the student to pick and choose from among them.

Theirs is a five-year program, with preservice training beginning in the junior year of college, and inservice training extending over three or four years of teaching. The latter is based on the assumption that "certain teacher behaviors might be developed more effectively after some full-time teaching experience."

FSU's plan lays great stress on the need for all-out cooperation from the public schools and calls for cooperating public school teachers to be appointed jointly by the University and the school system. These "faculty associates" will themselves be prepared for their work with trainees for at least two full-time summer terms–not in the mechanics of supervising student teachers but in studying new research on teaching effectiveness, new technological tools, and advances in various academic fields of knowledge.

To monitor the trainee's progress, says FSU, the University must store pertinent and copious information on each one, thus echoing most of the other eight program planners that institutions themselves will have to computerize their management function.

FSU's hope is that from their comprehensive program the student will emerge as a skilled curriculum builder, able to find, assemble, and organize the major materials of instruction, and to use a number of different teaching skills to gain the results he wants in the classroom.

Planners at the University of Massachusetts also feel that the student teacher needs practice in professional decision-making. It proposes, in fact, a reorganization of the elementary school laboratory so that it is staffed as much as possible by trainees, with only a few master teachers to direct operations.

University of Massachusetts planners also feel "differentiated staffing" is the wave of the future and that student teachers must be prepared to step into schools where this will be the pattern for personnel. They point out that the supposition of the past was that all teachers were the same, interchangeable as automobile parts, and that each student could be put through exactly the same teacher education assembly line.

This "normal school" concept, they charge, has forced teachers away from students into counseling or administration, and has rewarded the brilliant and enthusiastic teacher the same as the bored and incompetent one. To break the chain, they have devised a program to prepare a variety of people in different ways for various emerging roles in education, with the hope of "finding the right program for the applicant rather than the right applicant for the program."

Instruction in the University of Massachusetts program would be highly individualized "since there are alternative routes to the same skills." Students could enter the teacher education program at any level from the junior to the senior year, and some candidates would be admitted without regard to normal selection procedures, to test the techniques being used.

The importance for the future teacher of early experience with children is underscored in Michigan State University's program. During his first and second college years, for example, the student will work with children in many different settings—as assistant elementary teacher at the school, at the local YMCA, children's hospital, Head Start program, settlement house, summer camp, or in scouting.

MSU also proposes several clinical experiences for its prospective teachers, including one that assigns students as members of an elementary school "team" consisting of an intern consultant (highly skilled, experienced, elementary school teacher), four interns or experienced teachers, and two student teachers. This team of seven functions as a unit to provide instruction in four elementary classrooms. The students thereby get acquainted with the school organization, are able to analyze performance of the other team members, and receive help from senior team members.

Michigan also proposes to set up programs for "paraprofessionals"—as educational researchers, media specialists, educational managers of one kind or another. Thus those hopeful future teachers who cannot make the grade could be counseled out and into the less rigorous program of studies for ancillary school personnel.

The Northwest Regional Laboratory, in its model program, accents differences in the way people learn and proposes a program that permits students to move through at different paces and with different combinations of learning experiences.

A program like this, says the Laboratory, must "center around the continuing face-to-face experience of trainees with elementary children; involve experienced elementary teachers and administrators in specifying the competencies to be mastered; provide preservice internships in the schools in which the student will eventually work; and provide inservice continuing educational programs for both old and new teachers."

From the beginning of their college careers, students would be encouraged to look upon themselves as "developing professionals" and to seek ways to put their expertise to work—in tutoring, YMCA, Vista, Peace Corps, camping situations, etc.

The University of Pittsburgh regards the ailing inner city as the place to test a modern model for teacher education and the "great reform movements" in education as the basis for much of its course contents.

Located in a region where many successful programs of individualized instruction were well underway by the late '60's—the IPI curriculum at Oakleaf and McAnnulty schools, the Primary Education Project (P.E.P.) at Frick School, Falk School's individualized study programs, and Pittsburgh's computer based instruction, P.L.A.N.—the University planners lean heavily in this direction and would provide student teachers with the tools and the clinical practice for considerable practice in self-study, self-instruction, and self-pacing.

Another strong underlying tenet of their program is that a teacher education program must enable the student to examine from all angles the environment in which he will function. If it is to be the inner city, the teacher must be prepared to face and to handle such problems as "confused educational objectives, segregation, slum housing, malnutrition, immorality that damages children's concepts and capacities, teacher behavior that seems to add to that damage, and programs in elementary education that are not relevant in content or process to the damage."

Their aim is to produce a teacher education program with entirely new curriculum and behaviors, rather than continue merely to "furnish bodies to school systems deep in urban trouble."

Their students would concentrate on the study and investigation of problems of "human capacity"–relating physiological, psychological and social growth of the individual to development of his potentials; study of environmental systems which influence that growth; and they would use the methods of scholarly and scientific inquiry to explore various disciplines. In this latter field, chemistry, physics, and English professors, for example, would work with the behavioral scientists to translate new discipline structures and ideas into curriculum and materials for the elementary school.

In clinical settings, the student would field-test these ideas and construct his own teaching procedures, relating the decision he makes to the best of theory and research.

Syracuse University's five year program is designed to allow trainees to progress through a training network of instructional modules largely at their own rate, with emphasis in the early stages on professional sensitivity training.

The aim of the program is to produce a teacher with a "highly developed repertoire of professional skills and knowledge, which enables him to be both a competent generalist in elementary teaching, and a competent specialist in one curricular, instructional, or developmental field."

The plan calls for a brand of preparation that will help the trainee to 1) control his own behavior in order to influence behavior of others (this means specific training in self-monitoring); 2) understand and put into operation several conceptual models of instruction and management; 3) practice using simulated and real conditions of instruction; 4) learn to use at least one system of techniques for analyzing instructional and managerial behaviors; 5) learn to use relevant data about students, types of objectives, and knowledge of his own capabilities in order to make sound decisions about instructional strategies; 6) learn to evaluate to see whether his managerial and instructional intentions were actually carried out.

The Syracuse plan calls for a residence year for the student teacher. During that time, he would spend half his time either teaching in an elementary school classroom as a generalist, applying his specialties in a team teaching situation, or applying his specialties in curriculum or evaluating planning teams.

The trainees go as partners to the residence centers where they live with residence administrators and supervisors. Ten pairs of teachers might be assigned to one residence center, with each individual having some unique specialty to contribute that would lend variety to both self-contained and team teaching plans within the center. During their residence, trainees would be expected to spend considerable time (perhaps three or four weeks) in classrooms within the school system that are not a part of the residence center, or perhaps spend an equal amount of time in the school system where the trainee expects to be working the following year. In either case, the teacher that the trainee replaces would take the latter's place at the residence center—thus gaining valuable inservice training.

This residence year is really the topping-off of a very long-term project, because ever since his junior year the trainee has been engaged in formulating plans to use during that fifth year. The full-blown plan which he has developed by the end of his senior year thus becomes a hypothesis for teaching which he can test out during the residence experience.

There were many other significant experiments, pilots, and trial runs going on in the late 60's, revealing other clues to the rapidly-changing face of teacher education in the United States, and pointing out directions into the '70's and beyond.

One dominant concern of many institutions, for example, was how best to prepare students for inner-city teaching duties.

The University of Connecticut won the 1969 distinguished achievement award from the American Association of Colleges for Teacher Education for its program which brings students face to face with the realities of the slums. The ghetto itself is their teacher. Students spent 90 percent of their time there, observing, interviewing, talking with residents, and teaching them. Only 10 percent of their time is spent in formal seminar instruction.

The students live in the ghetto under the general supervision of a housemother-counselor who was a ghetto resident. They hear lecturers representing the ghetto's informal power structure who introduce them to its sociological and psychological realities and interpret the styles, perceptions and reactions of the residents. The program has no outside funding but is a cooperative effort of the University, the school districts, and the State Department of Education.

Another urban institution, Jersey City State College,* has a pilot teaching program where selected seniors replace regular teachers in inner-city schools. The regular teachers then are assigned to small classes of slow-learning children, as reading instructors, psychologists, and social workers. After a two-week orientation, the student teachers assume full responsibilities, are paid half-salary, and are closely supervised by college personnel.

Western Michigan University at Kalamazoo, also concerned about teachers for America's disadvantaged youth, assigns its preservice education students to eight weeks of supervised teaching and camp counseling experience with migrant or inner city children. It follows this up with seminars with specialists and concentrated before-and-after sensitivity training to help the future teachers meet the new challenges posed by such children.

As one aspect of its teacher training program, Trenton State has its students try tutoring, speech screening, therapy, story telling, student teaching, working with special learning problems, providing music and other cultural activities for disadvantaged youngsters in the city schools.

Another project of this type was inaugurated by Harris Teachers College, St. Louis, Missouri, in cooperation with an inner city school. Groups of college students regularly observe lessons taught there by master teachers and afterwards hold conferences with the teachers. Another aspect of the program is that every junior in the college taking educational psychology spends one hour each week getting to know a single elementary school child...and bringing his observations of that child back to class for discussion.

Also, many institutions had begun by the late 60's to give their students more practice in actual teaching and more experience in team teaching.

Wisconsin State University at La Crosse, for example, uses "Micro Team Teaching" which has three aims: to give student teachers increased

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*Examples in this series were taken from three successive issues (1967, 1968, 1969): the American Association of Colleges for Teacher Education, *Excellence in Teacher Education.* Washington, D.C., the Association.

responsibility for cooperatively planning, executing, and evaluating an instructional program; to enable inservice classroom teachers to learn the dynamics of team teaching; and to help school systems to try team teaching without having to reorganize the whole school or a whole section of the school. Two student teachers and one experienced teacher work with a small group of students (25-35) while operating as a team and accepting responsibility for the whole program.

At Elizabeth City (North Carolina) State College, superior students in the sophomore, junior, and senior classes serve as tutors to the incoming freshmen for the entire year. Professional teachers instruct the new tutors in the "how" and "why" of counseling and tutoring.

Drake University in Des Moines, Iowa, arranges for their elementary education majors to spend about 40 percent of their time working as teacher aides in two different community schools; 30 percent in regular college instruction; and the remaining 30 percent studying the community itself—its business, educational, social, and cultural profile.

Hope College, Holland, Michigan, runs an elementary school cooperatively with the school district, which features nongradedness and learning experiences which grow out of the concerns and interests of the children. Students engage in mini-teaching, a teaching cycle which includes two weeks of planning and one week of student team teaching. After the week in the classroom, students evaluate their own performance, and begin planning the next cycle.

Other institutions were giving future teachers more opportunities to get acquainted with children and thus to decide whether working with the young for the rest of their lives was really what they wanted to do.

At Wisconsin State University at Superior, sophomore students have opportunities to work with children at the level they hope eventually to teach—and can continue to work with them right through to the senior year.

St. Olaf College in Northfield, Minnesota, has a "perspectives on teaching" program designed to give undecided students a taste of what teaching would be like, and also to give those students who have definitely decided on a teaching career some variegated experiences in the classroom. Following a three-day seminar in secondary education, each student is assigned to cooperating teachers in three distinctly different live-in teaching experiences. The first week is spent in a rural community school; the second week, in a suburban junior high school; and the third week, students have a choice of assignment to some phase of special education—dealing with delinquent, physically handicapped, mentally retarded, deaf, blind, emotionally disturbed or culturally deprived children. In each of the three assignments, cooperating teachers are encouraged to build a program around the proposition: "If I had one week to show college sophomores what teaching is about, I would.." Students spend the final two days in seminars, sharing their ideas and experiences.

At Concordia (Nebraska) Teachers College, students have opportunities to become well acquainted with one elementary school child and possibly a high school student, a junior high pupil, an emotionally retarded child in a residence home, or a pupil in a special-education course—all of which, observers say, help to make his education courses more meaningful and create confidence for that first student teaching experience.

Like Michigan State, others have begun courses for "paraprofessionals" in education. St. Augustine's College in Raleigh, North Carolina, for example, has such a program suitable either for the student making it his prime choice, or for those advised to bypass the standard 4-to-5 year teacher education program. Offered in combination with a two-year secretarial science curriculum, it trains the student to become a school secretary and gives him background on which he may elect to build a four-year degree. He is given opportunities to observe and assist one or more teachers with record keeping, audio-visual media, test construction, and other paper work.

It is clear from all this that by the 1980's the idea of the teacher as a "lone operator" will be as outmoded as *McGuffey's Reader.* Instead he will be considered a skilled member of an instructional team.

Nor will he be able, as did the teacher of a generation ago, to rely on one, all-purpose, surefire, go-by-the-book lecturing style to serve many goals. He will have to be the commander in chief of an arsenal of teaching strategies that he can call into play to meet any instructional challenge. And besides the techniques, he will be armed with up-to-date information about academic subject matter which is constantly changing (consider biology and chemistry!) and which he can probably learn from the computer.

Perhaps the most eloquent and complete definition of the generation of teachers for the 1980's comes from the model program of teacher education proposed by Teachers College, Columbia University, as reported by Dr. Fattu. Here's that teacher's profile:

*He makes and uses knowledge.* The teacher must control "knowledge"—those methods or concepts one uses to organize life's experiences, and he must know how to instill this operative knowledge in students. Knowledge is not simply data or information; it is the way one goes about seeking data and drawing generalizations. The teacher therefore must know a lot about truth and fallacy, about evidence and bias, about the nature or theory of knowing. He needs to know what scholarly inquiry is, how knowledge is produced, held, used, and made obsolete.

*He shapes the school.* The teacher must develop strategies whereby he can identify critical educational problems and, along with his colleagues, make decisions for solving them. He has to make decisions about educational objectives and about the methods and procedures most likely to achieve those objectives. He has to organize curricula around coherent themes so that the growth of his students' knowledge from year to year may be cumulative rather than dispersive or sporadic. These curricula deal with content or subject matter, with ideas, methods, and values to be taught, with instructional resources, with the organization of students into classes or groups, with testing and evaluation, and with every other general educational influence on students. Every teacher must learn how to cooperate with his colleagues to make comprehensive decisions affecting these several interacting problems.

*He teaches with strategy.* For carrying out the various curricular decisions, the teacher must learn how to employ a wide range of teaching strategies. He must find appropriate methods and materials and then reward the behaviors he wants to encourage in students and inhibit those he wishes to discourage. When appropriate, he needs to teach didactically. When appropriate, he needs to lead students. Most important, the teacher must exercise self-control with students so that his personal feelings or needs do not interfere with his efforts to carry out professional decisions.

*He creates interpersonal climates.* The teacher must learn how to work with groups of people–students and colleagues, both children and adults. He must recognize his effect on groups and their effect on him. As a member of a team of teachers, he must know both how to lead and how to cooperate. He has to cope with the formidable social realities of the communities and schools within the city. With children he must further know how to stimulate *their* ability to lead and cooperate in groups in a shared search for knowledge. All this calls for an ability to experiment with varieties of organization, to compromise with fellow teachers on plans and procedures, and to diagnose the needs and the interests of children who must be organized.

*He radiates a creative personality.* The teacher must learn to cope with himself. He must handle information and theories flexibly and accurately with minimal personal bias and with resolve and understanding. He must be able to control himself when children challenge established authority and standards, and he must help them develop their own standards. He must provide a mountain of support for the frightened and insecure child, however unlovely he may be. He must learn to radiate the interpersonal climate appropriate to the task at hand and to the children being taught. He must become able to assess his own behavior objectively and then work deliberately to improve it; he cannot afford to be defensive about his current personality or practices.

# Appendix A

## Selected Materials From M-Step

The Multi-State Teacher Education Project (M-STEP) is a compact of seven geographically separated state departments of education in Florida, Maryland, Michigan, South Carolina, Utah, Washington, and West Virginia. Since its approval by the United States Commissioner of Education on March 10, 1966, it has enlisted the cooperation of many colleges and universities, local public school systems, and professional organizations in an intensive and extensive study of teacher education programs. Established techniques have been examined, innovations studied and tested, and prototypes developed which may influence future teacher preparation programs both within and beyond the states involved in the Project.

The Central Office and the individual member states of M-STEP have produced a variety of materials. In the early stages of the Project, a bimonthly *M-STEP Newsletter* from the Central Office reported on the activities of the Project states. As the Project progressed, an interim report from the Central Office, *M-STEP Today*, was circulated widely, as was *Television and Related Media in Teacher Education*, the first in a series of M-STEP monographs. Throughout the Project the compact states have produced both print and nonprint materials.

M-STEP publications are intended to serve one or more of the following purposes:

- As information dissemination and resource aids to the states of the compact concerning Project processes and outcomes.
- As information sources for Project states and others concerning current practices and innovative procedures on the national scene which apply to teacher education programs, especially as these may affect current and future plans for development in the states.
- As service aids in the form of videotapes, films, and published items which possess direct use potential for teacher education.

Detailed instructions for obtaining M-STEP materials follow.

## HOW TO OBTAIN M-STEP MATERIALS

### Print Materials

All printed materials produced in connection with the Multi-State Teacher Education Project, with the exception of certain unpublished manuscripts, are currently available in limited quantities, free of charge, from the respective State Departments of Education which published them.

Persons interested in obtaining M-STEP literature should first check this listing for the correct title of the publication desired and the name of the producing state. The names of the M-STEP representatives who will process requests in the various states follow:

**Florida**

K. Fred Daniel
State Department of Education
Tallahassee, Florida 32304

**Maryland**

Herman E. Behling, Jr.
State Department of Education
Baltimore, Maryland 21201

**Michigan**

Jerry E. Chapman
State Department of Public Instruction
Lansing, Michigan 48902

**South Carolina**

George W. Hopkins
State Department of Education
Columbia, South Carolina 29201

**Utah**

Vere A. McHenry
State Department of Education
Salt Lake City, Utah 84111

**Washington**

William H. Drummond
State Department of Public Instruction
Olympia, Washington 98501

**West Virginia**

James B. Thomas
State Department of Education
Charleston, West Virginia 25305

## Non-Print Materials

Video materials produced by the Multi-State Teacher Education Project are currently available through the appropriate agencies in the states which developed the films, kinescopes, and videotapes. Persons interested in obtaining M-STEP video materials should follow the procedures outlined below.

### SOUTH CAROLINA

Several policies govern the distribution of tapes and films. They are as follows:

> Requests for copies of videotapes or films produced by South Carolina M-STEP from any of the cooperating M-STEP offices will be handled free of charge for the duration of the Project, subject to the following conditions:
>
> > The requesting M-STEP official will furnish a blank tape in one-inch width for a portable Ampex Video Tape Recorder or two-inch quadraplex of appropriate length.
> >
> > Such materials will be sent prepaid.
>
> Requests for copies of videotapes and films produced by South Carolina M-STEP from other organizations and individuals will be handled as follows:
>
> > An agency or individual wishing a copy of these materials should furnish a blank tape of appropriate length and width.
> >
> > The South Carolina Educational Television Center will receive only those blank tapes for which reproducing equipment is available. Requests for dubbing on equipment other than two-inch quadraplex or one-inch Ampex 7000 should be made to the Supervisor of Teacher Education, Office of Teacher Education and Certification, State Department of Education, Columbia, South Carolina 29201, for a determination of availability of appropriate equipment.
> >
> > A standard charge of $35.00 is made by the South Carolina Educational Television Center for reproducing or making a duplicate copy. Checks should be sent in advance to the South Carolina Educational Television Network. Tapes will be shipped collect.

The Office of Teacher Education and Certification is pleased to cooperate with interested organizations and individuals desiring to use any of the video materials produced in South Carolina. Requests should be made to the following person:

Supervisor of Teacher Education
Office of Teacher Education and Certification
South Carolina Department of Education
Rutledge Building
Columbia, South Carolina 29201

## UTAH

The following video materials produced in connection with the Multi-State Teacher Education Project are currently available for duplication or loan in accordance with the following revised policy:

> Videotapes are not circulated. They may be duplicated on blank compatible videotapes furnished by the requesting party. A nominal dubbing charge will be the only additional cost amounting to approximately $8.00 per program up to 30 minutes in length for ½" videotapes or $25.00 per program up to 60 minutes in length for 1" or quadriplex videotapes.
>
> All 16mm films and one kinescope may be obtained from the educational Media Center, 207 Milton-Bennion Hall, University of Utah, Salt Lake City, Utah 84112. A service charge of $2.25 per item will be charged and the borrower will be responsible for return postage and insurance.
>
> These materials are coded as follows:
>
> F – 16 mm sound film
>
> V½ – ½" concord video
>
> V1 – 1" Ampex videotape
>
> V2 – 2" quadraplex videotape
>
> K – 16 mm sound kinescope
>
> C – Super 8 mm sound film cartridge (for Technicolor Model 1000 sound film projector)

If the item is available in more than one form, each is indicated. For example, if a program were originally produced on 2" quadraplex videotape and later dubbed to 1" videotape and kinescoped, it would be coded "V2, V1, K." Running time of each tape or film is also shown.

## PRINT MATERIALS

### Bulletins and Monographs

*Aides for Florida Teachers.* Florida State Department of Education, Tallahassee, 1967, 20 pp.

Explores the idea of using aides to assist teachers to become more effective instruments of education. Describes the various activities of teacher aides and explains existing needs for personnel and training within the state.

*Challenges and Needed Developments in Teacher Education.* L. O. Andrews, Ohio State University.

Embraces the theme that teacher education has not risen to such heights as to meet the needs of education as they have existed in the past. Demands of the present and portents of change in the future suggest the desirability of extensive rethinking and redevelopment of theory, content, and experiences in the whole range of preservice and inservice teacher education.

*Developing a County Program for Evaluating Teaching.* Florida State Department of Education, Tallahassee, 1967, 12 pp.

Provides suggested procedures and guiding principles for a county program for evaluating teaching in elementary and secondary schools and points out techniques for collecting evidence and comparing it with criteria.

"Guidelines for Developing Staff Improvement Activities." Florida State Department of Education, Tallahassee, 1968, 3 pp. (Unpublished ms.)

Sets forth guidelines developed by the Florida Teacher Advisory Council at the request of the Florida State Superintendent of Public Instruction.

*Guidelines for Student Teaching in Florida.* Florida State Department of Education, Tallahassee, 1966, 16 pp.

Offers guidelines for a sound and productive student teaching program, including a rationale, organizational structure for student teaching, functions and responsibilities for participants, criteria for selecting supervising teachers, and notes on working with student teachers.

*Handbook for Student Teaching.* South Carolina State Department of Education, Columbia, 1967, 16 pp.

Records the role of the State Department of Education, teacher education institutions, and the cooperating schools in the preparation of teachers. Also includes selection criteria and information about the student teaching program in South Carolina.

*The Individualized Secondary Teacher Education Program at Brigham Young University.* Utah State Board of Education, Salt Lake City, 1968, 35 pp.

Describes an experimental teacher education program based on an attempt to relate professional education concepts and laboratory experiences as nearly as possible to actual teacher behaviors as expected from the individual in an on-the-job situation following certification.

*Innovations in Student Teaching.* James A. Johnson, Northern Illinois University, DeKalb. Monograph IV, 43 pp.

Presents a list of practices in student teaching which were considered innovative in 1967-68 by more than 400 institutions which reported. Innovations are listed by state and institution.

*The Measurement and Evaluation of Teaching: A Conceptualization of a Plan for Use in State Educational Leadership.* Florida State Department of Education, Tallahassee, 1967, 125 pp. (Out of print. Available from ERIC, No. ED 018862.)

Describes the significance and ambiguity of information on teaching, the state's prescribed procedures for evaluating teaching, approaches to the evaluation of teaching, and an approach to organizing and analyzing information on teaching to implement state educational leadership.

*M-STEP at the College of Southern Utah.* College of Southern Utah, Cedar City, 1967, 27 pp.

Describes activities involved in planning and production of thirteen videotapes covering the superior teacher at work, student teachers at work, and structured observation of classroom activities.

*A National Survey of Student Teaching Programs.* James A. Johnson, Northern Illinois University, DeKalb, Monograph II, 104 pp.

Surveys current practices of student teaching programs in the United States. Data from 870 institutions throughout the nation were collected early in 1968, consolidated and prepared for release in July of the same year.

*A Partnership: The Teacher Education Center.* Herman E. Behling, Jr., Maryland State Department of Education, Baltimore, 1969.

Describes the M-STEP-sponsored Maryland Teacher Education Center.

*A Teaching Behavior Code.* Utah State Board of Education, Salt Lake City, 1969, 54 pp.

Describes an instrument for analyzing instructional procedures. Developed by Asahel D. Woodruff and Janyce Taylor at the University of Utah.

*Television and Related Media in Teacher Education–Some Exemplary Practices.* Multi-State Teacher Education Project, Baltimore, Maryland, 1967, 52 pp.

Brings together twenty articles describing the use of videotapes, materials, and processes which are currently in operation in representative institutions of the United States.

*The Use of Video Processes in Teacher Education.* Utah State Board of Education, Salt Lake City, 1967, 29 pp.

Reports M-STEP activities in Utah, including micro-teaching at Brigham Young University, the production of recorded classroom episodes at the College of Southern Utah, and videotaped peer teaching (micro-teaching) at the University of Utah.

*Video Processes in Teacher Education: Scope, Techniques and Assessment.* Multi-State Teacher Education Project, Baltimore. Monograph III, 32 pp.

Describes the broadening scope of video processes in teacher education programs, the use of techniques such as micro-teaching, and observation of teaching episodes via 8mm repeater loop cartridges. These articles are followed by a description of a state-wide program in the utilization of television and an appraisal of video applications in teacher education.

### Descriptive Research and Instruments

"Certification and Compensation for Supervising Teachers: A Questionnaire Survey." M. Mitchell Ferguson, et al., Florida State Department of Education, Tallahassee, 1967, 8 pp. (Mimeo.)

Summarizes a survey conducted to obtain views of various segments of the teaching profession regarding certification and compensation for supervising teachers, giving information on samples and returns, respondents, and certification and compensation of persons who supervise student teachers. Also includes "Criteria for Selecting Student Teachers" which was adopted by the Florida Teacher Education Advisory Council.

"Classes Taught in Florida Public Schools During the 1966-67 School Year Arranged by Type of Certificate Held by the Teacher and Type of Preparation Completed by the Teacher." Mrs. Martha Ripley, Florida State Department of Education, Tallahassee, 1968, 2 pp. (Unpublished ms.)

Consists of tables covering classes at the elementary school level (grades 1-6), the junior high school level (grades 7-9), and the senior high school level (grades 10-12).

"New Teachers in Florida Public Schools, 1965-66 and 1966-67." Florida State Department of Education, Tallahassee, 1967, 9 pp. (Mimeo.)

Contains tabulations by re-entry status, certificate rank, state of graduation, and Florida institution of graduation.

## Newsletters

*Maryland M-STEP Newsletter.* State Department of Education, Baltimore, Maryland, 1968, 2 pp.

Described the teacher education center concept in Maryland and was circulated through the seven project states and to fifteen nonproject states to individuals requesting it.

*M-STEP Newsletter.* Multi-State Teacher Education Project, Baltimore, Maryland, 1966, 4 pp.

Reported, during the first year of M-STEP's operation, the early stages of the project, its purposes and progress, to participating states and to leaders in the teacher education field nationally.

*Multi-State Teacher Education Project Monthly Newsletter.* South Carolina State Department of Education, Columbia, 1967-68, 2 pp. per month.

Described current activities in teacher education of special interest to those associated with the South Carolina M-STEP program.

## Occasional Papers

*Commitment to Improvement in Teacher Education Through M-STEP.* South Carolina State Department of Education, Columbia, 1967.

Describes the first three tapes produced by South Carolina M-STEP on the following: lesson planning, the teaching unit, and evaluation in student teaching.

*A Diagnostic System for the Evaluation of Teaching Performance.* Division of Teacher Education, Certification, and Accreditation, Florida State Department of Education, Tallahassee, December, 1968, 2 pp. (MS)

Describes six steps in a system for evaluating teaching.

"Improving Teaching in Florida Through the Education Professions Development Act." K. Fred Daniel, Florida State Department of Education, Tallahassee, 1968, 15 pp. (Mimeo.)

Summarizes the provisions of the Education Professions Development Act and recommends procedures for coordinating EPDA activities in Florida.

*Individualized Teaching in a Group Setting.* K. Fred Daniel, Florida State Department of Education, Tallahassee, 1969, 5 pp. (MS)

Analyzes the process of teaching, with individualized instruction in group situations as the teacher's goal.

"Position Paper on Student Teaching Programs." Michigan State Department of Education, Lansing, 1968, 6 pp. (Mimeo.)

Provides guidelines for a student teaching program based on closer partnership between the teacher preparation institutions and the public schools—a program that will offer real hope for greatly strengthening teacher education and simultaneously provide improved inservice education opportunities for the teachers in the schools. Included are sections on program design, a proposed model, and anticipated benefits from the proposed program to the student, the teachers and the school, the pupils in the school, and to the college. Developed by the deans and directors of Michigan's public and private teacher preparation institutions.

"A Program of Staff Development for Florida Public Schools." Florida State Department of Education, Tallahassee, 1967, 6 pp. (Mimeo.)

Discusses state leadership involved in staff development, and presents fundamental steps in planning and implementing a staff development program. Prepared for the Governor's Commission on Quality Education by the Division of Teacher Education, Certification, and Accreditation, Florida State Department of Education.

*Providing Quality Teaching for Florida Public Schools.* K. Fred Daniel, Florida State Department of Education, Tallahassee, 1969, 7 pp.

Suggests artistic applications of technology and a changing role for the teacher.

"The Roles of the Florida State Department of Education and the Florida Teacher Education Advisory Council in Teacher Education." K. Fred Daniel, Florida State Department of Education, Tallahassee, 1967, 8 pp. (Mimeo.)

Sets forth the legal basis for the roles of the Florida State Department of Education and the Teacher Education Advisory Council in Teacher Education, giving examples of activities of the

two bodies and indicating future directions in state leadership for teacher education.

"Some Notions Regarding Guidelines for Teacher Education Programs." Florida State Department of Education, Tallahassee, 1968, 2 pp. (Unpublished ms.)

Suggests that guidelines should not be excessively prescriptive in recommending teacher education experiences but rather should give guidance in terms of the knowledge, attitudes, and skills which should be possessed by the persons who complete the program.

"Some Relationships Between Objectives and Situation Variables in Professional Laboratory Experiences." K. Fred Daniel, Florida State Department of Education, Tallahassee, 1966, 12 pp. (Mimeo.)

Explores the relationships which exist between professional laboratory experience objectives and various characteristics of laboratory experience situations.

### Proceedings and Reports

"Analyses of the Florida Teacher Evaluation Data." K. Fred Daniel, Florida State Department of Education, Tallahassee, 1967, 10 pp. (Mimeo.)

Covers analyses using earlier versions of the Florida Teacher Evaluation form, studies using the current version, an evaluation of the Florida Teacher Evaluation Program, and reactions to studies using data collected with the current form. Excerpt from *Ideas from M-STEP.*

State of Florida, Department of Education, *M-STEP Final Report,* Tallahassee: The Department, 1968.

*Ideas from M-STEP.* Florida State Department of Education, Tallahassee, 1967, 59 pp.

Consists of proceedings of a conference held at the University of Florida to review and evaluate teacher education experiences of the seven M-STEP states and to strengthen the teacher education program within Florida.

The Maryland Department of Education *Maryland M-STEP: A Final Report*, Division of Certification and Accreditation, Baltimore, 1969.

Michigan Department of Education, Bureau of Higher Education, *Final Report Multi-State Teacher Education Project.* Lansing: The Department, 1968.

*M-STEP Today.* Multi-State Teacher Education Project, Baltimore, Maryland, 1967, 42 pp.

Presents a composite interim report of the seven M-STEP state projects' progress in the areas of laboratory experience, video processes, intrastate organization, and interstate cooperation. Also includes bibliographies of current and projected M-STEP publications.

*Proceedings of the Multi-State Teacher Education Project Planning Conference at Park City, Utah.* Utah State Board of Education, Salt Lake City, 1966, 116 pp. (Out of print.)

Reports on a two-day conclave held to consider methods of improving professional laboratory experiences, with emphasis on the use of new media.

"Projections of Personnel Needed to Maintain Present Programs in Florida Public Schools, 1967–1977." Florida State Department of Education, Tallahassee, 1967, 13 pp. (Mimeo.)

Reports on a long-range study of pupil membership by grades and the new personnel and total personnel needs by assignment classification.

State of South Carolina, Department of Education, *The Multi-State Teacher Education Project: Final Report.* Columbia: The Department, 1968.

"Teacher Education Advisory Council Annual Report for 1967." William J. Woodham and Wm. Cecil Golden, Florida State Department of Education, Tallahassee, 1967, 14 pp. (Mimeo.)

Covers the workings of the Council; the need for the State Department of Education to compile, analyze, and synthesize information on pertinent issues; the alternative approaches to certification; the importance of inservice education for teachers; and state legislative changes affecting the Council.

Utah State Board of Education, *Report of Utah Activities in Connection with the Multi-State Teacher Education Project.* Salt Lake City: The Department, 1968.

The Washington State Department of Education, *M-STEP in Washington: An Adventure in Change.* Olympia: The Department, 1968.

A final project report.

West Virginia State Department of Education, *Pilot Center for Student Teaching.* Charleston: The Department, 1968.

A final project report.

## Bibliographies

*A List of Video Materials for Teacher Education.* Utah State Board of Education, Salt Lake City, 1967, 13 pp. including supplement.

Lists films, kinescopes, and videotapes developed by Utah and South Carolina M-STEP.

*Teacher Education Resources.* South Carolina State Department of Education, Columbia, 1968, 14 pp.

Lists print and nonprint materials developed by South Carolina M-STEP and the Inservice Teacher Education Project. Also lists selected video materials for teacher education produced by the Utah State Board of Education.

## Study Guides

*A Day in the Life of an Intern.* South Carolina State Department of Education, Columbia, 1967, 12 pp.

Accompanies the South Carolina M-STEP videotape which portrays certain significant activities of an intern teacher.

*Empathy in Student Teaching: Its Relation to Effective Learning.* South Carolina State Department of Education, Columbia, 1967, 11 pp.

Accompanies the South Carolina M-STEP videotape which is designed as an unrehearsed student teaching session to provide vicarious experiences for student teachers in methods courses, in seminars, and in student teaching courses.

*Evaluation in Student Teaching.* South Carolina State Department of Education, Columbia, 1967, 15 pp.

Accompanies the South Carolina M-STEP videotape which illustrates one broad approach to student teacher evaluation using the Pupil Inventory Form as the originating impetus for subsequent evaluation.

*Lesson Planning.* South Carolina State Department of Education, Columbia, 1967, 11 pp.

Accompanies the South Carolina M-STEP videotape which examines certain basic principles believed essential or common to lesson planning.

*Roles in Student Teaching.* South Carolina State Department of Education, Columbia, 1967, 15 pp.

Accompanies the South Carolina M-STEP videotape which identifies the several agencies and individuals who play a role in the student teaching experience.

*Unit Teaching.* South Carolina State Department of Education, Columbia, 1967, 12 pp.

Accompanies the South Carolina M-STEP videotape which examines those elements which go into the making of effective unit plans.

*Using Video Processes in Teaching, Parts 1 and 2.* South Carolina State Department of Education, Columbia, 1967, 14 pp.

Accompanies the South Carolina M-STEP videotape which illustrates ten use categories for television in teacher education.

*Vitalize Your Teaching Through the Use of Media.* South Carolina State Department of Education, Columbia, 1967, 14 pp.

Accompanies the South Carolina M-STEP videotape which gives a broad overview of the various audiovisual materials and techniques that are available to a teacher in order to vitalize and enhance teaching.

## NON-PRINT MATERIALS

NOTE: The medium on which each of these materials is available appears immediately following the title, together with the running time and the name of the M-STEP state which produced the segment. Titles available on several media are cross-referenced. To describe the media, the following identifications are used:

FILMS

F –16mm sound, black and white film
CF–16mm sound, color film
S8 –Super 8mm sound film cartridged for use with the Technicolor Model 1000 Super 8 m m sound film projector

KINESCOPES

K –16mm sound, black and white kinescope

VIDEOTAPES

V ½–one-half inch Concord videotape
V 1 –one-inch Ampex videotape
V 2 –two-inch quadraplex videotape

### Films

*A Beginning Teacher's First Day.* (F); 18 min., Utah.

Focuses on a beginning teacher on the opening day of school. Shows the orientation procedure for new teachers and leads up to a few scenes from a somewhat typical first day. Pupils are shown in a total group reading situation, coloring a picture of a clown and pinning their names on the bulletin board.

*Creative Processes in the Elementary School.* (S8); 20 min., Utah.
See "Videotapes" for annotation.

*A High School Teacher on the Opening Day of School.* (F); 10 min., Utah.
Includes part of the orientation of a class of psychology students on the opening day of school. The teacher discusses the textbook and supplemental materials, general format of the course, and grading.

*Interaction Analysis.* Parts I, II, III, and IV. (CF); 20 min. each part, Utah.
Demonstrates and shows examples of direct and indirect teacher influence as defined by Flanders in his interaction analysis system. Part I includes an introduction to use of the Flanders matrix and examples from the academic field of the social studies. Part II focuses on English; Part III, on mathematics; and Part IV, on science.

*Model Student Teacher Behavior.* (S8); 60 min., Utah.
See "Videotapes" for annotation.

*Model Teaching (Elementary).* (S8); 45 min., Utah.
See "Videotapes" for annotation.

*Outdoor Education.* (CF); 15 min., Utah.
Illustrates techniques for inservice training for teachers in outdoor education. Examples are drawn from the Outdoor Education Workshop at Ephraim Canyon in Central Utah.

*The Role of the Cooperating Teacher (Elementary).* (F); 10 min., Utah.
Shows the student teacher planning with her cooperating teacher, actually performing, and finally evaluating her performance. Produced in cooperation with Westminster College and the Salt Lake City School District.

*The Role of the Cooperating Teacher (Secondary).* (F); 10 min., Utah.
Shows a secondary student teacher planning, teaching, and evaluating. A companion to *The Role of the Cooperating Teacher (Elementary),* this film was also produced in cooperation with Westminster College and the Salt Lake City School District.

*The Student Teacher Center.* (CF); 18 min., Utah.
Emphasizes the operation of the secondary student teacher center. A color version of *Student Teaching Centers at the University of Utah,* this film has similar but not identical content.

*Student Teaching Centers at the University of Utah.* (F); 27 min., Utah.
Describes characteristics and operation of student teaching centers described in the day-to-day activities of the individuals involved. Three typical centers are shown, two at the elementary and one at the secondary level.

*Teaching in an Integrated School.* (F,S8); 25 min., Utah.
Shows Navajo and Ute Indian children as they have been integrated into the public school system of San Juan County. In this unstructured observation the teacher directs his class through one or two basic number experiences and then into an activity period involving individualized project work.

*Teaching in a Rural Secondary School.* (F); 22 min., Utah.
Focuses on an unstructured observation in which a teacher directs a review of forces and vectors with a class of twelfth-grade physics students.

*Teaching in a Two-Room Rural School.* (F); 22 min., Utah.
Opens with a primary grade teacher conducting a health inspection. Shows how the dividing door of the school is closed to form two classrooms and how the other teacher works with the older students (grades 5-8) in arithmetic and social studies. Total enrollment of the school is 19, seven of which are Goshute Indian children.

*Teaching in an Urban Elementary School.* (S8); 30 min., Utah.
See "Videotapes" for annotation. See also "Kinescopes."

*Teaching in an Urban High School.* (S8); 30 min., Utah.
See "Videotapes" for annotation. See also "Kinescopes."

*Teaming for Learning.* (S8); 17 min., Utah.
See "Videotapes" for annotation.

*Television Utilization Techniques.* (CF); 16 min., Utah.
Apprises teachers of various techniques of using television as an aid to classroom instruction, indicating both strengths and weaknesses of the medium.

*Using Portable TV Equipment in Teaching.* (F); 18 min., Utah.
Demonstrates the use of the portable videotape recorder, camera,

and monitor in various classroom situations including the automatic taping of broadcast ITV, self-appraisal of performance, presentation of detailed demonstrations and experiments, preservation of performance of guest lecturers and resource people, and taping of classroom activities.

*Utilizing Television in Concept Development.* (CF); 26 min., Utah.
Demonstrates development of an instructional unit on fish based on ITV programming (Scienceland). Shows teacher working with a group of elementary pupils in formulating behavioral objectives and sub-objectives and using television to assist in developing concepts.

## Kinescopes

*Micro-Teaching at BYU.* (K); 30 min., Utah.
See "Videotapes" for annotation.

*Pre-Kindergarten Education.* (K); 30 min., Utah.
See "Videotapes" for annotation.

*Teaching in a Continuous Progress School.* (K); 33 min., Utah.
See "Videotapes" for annotation.

*Teaching in a Non-Graded High School.* (K); 30 min., Utah.
See "Videotapes" for annotation.

*Teaching in a Rural Elementary School.* (K); 30 min., Utah.
See "Videotapes" for annotation.

*Teaching in an Urban Elementary School.* (K); 30 min., Utah.
See "Videotapes" for annotation. See also "Films."

*Teaching in an Urban High School.* (K); 30 min., Utah.
See "Videotapes" for annotation. See also "Films."

*Team Teaching in First Grade.* (K); 30 min., Utah.
See "Videotapes" for annotation.

*Team Teaching in Junior High School.* (K); 30 min., Utah.
See "Videotapes" for annotation.

*The Use of Audio-Visual Media in the Improvement of Student Teaching and Related Experiences.* (K); 45 min., Utah.

Features L. O. Andrews and F. R. Cyphert of the Ohio State University discussing new media in teacher education for the M–STEP Conference at Park City, Utah, July 1966.

Videotapes

*Application of a Concept.* (V½, V 1); 27 min., Utah.

Uses the culminating activities of a unit in speech taught by a student teacher to demonstrate how ideas learned and understood can be transferred into living experiences within the classroom.

*Creativity.*(V½, V 1); 21 min., Utah.

Views five teachers in the public schools who spent one year working together to examine creativity in teaching. Discusses the results of their work together and their problems and successes.

*Creative Processes in the Elementary School.*(V 1, V 2); 20 min., Utah.

Uses story form to follow a teacher from her traditional structured classroom to an inservice workshop where she discovers the values of techniques to bring about creative teaching. (See "Films.")

*A Day in the Life of an Intern.*(V 1); 30 min., South Carolina.

Portrays certain significant activities of an intern teacher. The intern teacher is working under a special program in Sumter, South Carolina, School District Seventeen, as a part of a pilot project designed to prepare National Teacher Corps interns for successful teaching careers.

*Elementary Student Teaching-Planning, Teaching and Evaluating.* (V ½, V 1); 21 min., Utah.

Shows a student teacher planning and evaluating with her cooperating teacher in a kindergarten where the opening activities of the day and arithmetic readiness skills are presented and taught.

*Empathy in Student Teaching: Its Relation to Effective Learning.* Parts I and II . (V 1); 30 min., each part, South Carolina.

Presents the classroom experience of a young student teacher.

*Evaluation in Student Teaching.*(V 1, V 2); 30 min., South Carolina.

Illustrates one broad approach to student teacher evaluation using the Pupil Inventory Form as the originating impetus for subsequent evaluation.

*The Father Image.* (V½, V 1); 16 min., Utah.
Follows briefly the activities of two teachers in the classroom and one outside the class in pointing out the challenge and opportunity for men in the elementary school.

*Helping Each Other.*(V½, V 1); 16 min., Utah.
Emphasizes how students learn when they help each other. Has a brief bit from a before-school math class in the first grade, but the majority of the tape follows work in a third-grade reading session.

*How Do I Teach This Lesson?* (V½, V 1); 19 min., Utah.
Emphasizes that there are many ways to teach a lesson and that the method for a particular lesson should be selected on the basis of four evaluative points. Junior high school social studies provides the subject-matter background.

*How to Teach a Skill.*(V½,V 1); 20 min., Utah.
Shows the development and use of a skill lesson plan in a teaching situation. The subject matter is mouth-to-mouth resuscitation, and the tape is designed to help prospective teachers learn how to teach a skill.

*Lesson Planning . . . Is It Necessary?*(V 1); 30 min., South Carolina.
Examines certain basic principles believed essential or common to lesson planning. Shows a class of student teachers discussing with their professor their findings on the importance of a lesson plan in light of their recent firsthand classroom experience.

*Methods of Evaluating Micro-Teaching Sessions.* (V 1); 30 min., Utah.
Features Hugh Baird and Lyal Holder discussing various ways of critiquing micro-teaching sessions. Student teachers share their reactions to micro-teaching sessions which they have just concluded.

*Micro-Teaching at BYU.* (V 1, V 2); 30 min., Utah.
Discusses and demonstrates current use of micro-teaching as a technique in teacher education at Brigham Young University.

*Misfits.* (V ½, V 1); 17 min., Utah.
Takes a look at five students, each representing a type of junior high school adjustment problem, and points out how an activity program in art helps these students overcome their personal difficulties.

*Model Student Teacher Behavior.*(V 1); 60 min., Utah.
Illustrates, through eight micro-teaching episodes, various abilities a teacher should possess to be effective in the classroom, including

concept teaching (oral and non-oral) and inquiry training. (See "Films.")

*Model Teaching (Elementary).* (V 1); 45 min., Utah.

Utilizes three model examples of teaching on the elementary level. Produced in a studio situation in cooperation with the College of Education, University of Utah, the videotape has three sequences. The first sequence (10 minutes) shows a teacher working with a group of students in a science experiment, demonstrating non-verbal aspects of teaching. In the second sequence (15 minutes) a teacher is at work with a group of students in a math situation. She sets the stage for eliciting responses from the students and then uses the kind of artful questioning that invites convergent rather than divergent thinking. The third sequence shows a teacher working with a group of kindergarten children helping them to work together cooperatively. (See "Films.")

*Model Teaching (Secondary).* (V 1); 50 min., Utah.

Presents four examples of teaching methods at the high school level. The first sequence (10 minutes) shows a social studies class discussing possible reforms in the electoral college. The final sequence (10 minutes) demonstrates the use of group dynamics as an approach to helping students learn to evaluate and to discriminate as to what constitutes good art.

*Practical Arithmetic Experiences in the Primary Grades.* (V ½, V 1); 27 min., Utah.

Views a skilled primary grade teacher using the mid-morning lunch program as a focal point for many practical experiences in arithmetic.

*Pre-Kindergarten Education.* (V 1,V 2); 30 min., Utah.

Shows 15 four-year-old children, in an early admissions program, being exposed to experiences designed to prepare them for the more formal environment of the kindergarten they will enter the next year. A bilingual classroom assistant, Mrs. Ester Hernandez, helps many of the Spanish-American children to verbalize ideas. Other adults shown are parents who volunteered to assist with the group. (See "Kinescopes.")

*Roles in Student Teaching.* (V 1); 30 min., South Carolina.

Visualizes contemporary theory about selected aspects of the role, relationship, and responsibility considered significant for each of the following as they are involved in student teaching: student teacher, pupils, the cooperating or supervising teacher, college supervisor of student teaching, other college personnel, the principal, the superintendent, and other local school personnel.

*Secondary Student Teaching-Planning, Teaching and Evaluating a Lesson.* (V ½, V 1); 16 min., Utah.
Shows a secondary student teacher planning a lesson, teaching the lesson in math at the senior high school level, and evaluating the results with the cooperating teacher.

*Student Teaching Block Programs.* (V 1); 20 min., Utah.
Features Dr. John Haas discussing the professional block in social studies education at the secondary level as instituted at Utah State University. The objectives of the program are: (1) to integrate methods instruction with student teaching, (2) to provide continuity of instruction in the terminal stages of teacher preparation, and (3) to experiment with block-time, varied size classes, and team teaching education.

*Student Teaching Centers.* (V 1); 16 min., Utah.
Shows Asahel D. Woodruff, former Dean of the College of Education, University of Utah, discussing the Student Teacher Center concept as it has been developed at the University of Utah.

*Teaching in a Continuous Progress School.* (V 1, V 2); 33 min., Utah.
Consists of two separate sequences, one at the first-grade and the other at the fourth-grade level. In this unstructured observation the first sequence focuses on a teacher working with a group of first-grade students in an experience approach to teaching reading. The second sequence shows another teacher working with sixth-grade students in developing and reinforcing mathematics concepts. Students are shown in various kinds of individual study situations. (See "Kinescopes.")

*Teaching in a Non-Graded High School.* (V 1, V 2); 30 min., Utah.
Consists of an unstructured observation in a small rural high school in south-central Utah. Tenth-, eleventh-, and twelfth-grade students are integrated into various classes which are arranged on a 90-minute schedule. Following a brief consideration of significant current news events, the teacher directs his class in the consideration of material relevant to a newly introduced unit on the family. (See "Videotapes.")

*Teaching in a Rural Elementary School.* (V 1, V 2); 30 min., Utah.
Consists of an unstructured observation in a small rural school in Wasatch County, Utah. The teacher directs her fourth-grade

students in a language arts experience in which they learn proper ways of introducing each other to one another and to a group. She also demonstrates a method of teaching a new song to her group. (See "Kinescopes.")

*Teaching in an Urban Elementary School.* (V 1, V 2); 30 min., Utah.
Uses an unstructured observation to focus on a teacher working with a group of 16 second- and third-graders in an attempt to teach and reinforce basic arithmetic concepts. The teacher uses chairs to illustrate the number line and directs students to move up and down the line to develop insight into addition and subtraction. (See "Films" and Kinescopes.")

*Teaching in an Urban High School.* (V 1, V 2); 30 min., Utah.
Shows in an unstructured observation, a teacher developing theorems for the use of exponents with a class of second-year algebra students. (See "Films" and Kinescopes.")

*Teaching Language Arts in the First Grade–Part I.* (V ½, V 1); 25 min., Utah.
Shows first-grade pupils involved in practical language situations. First, with the teacher acting as a scribe, they compose an attendance chart. After the chart is finished, the children read it together, picking out interesting words and sounds. Later, two of the children prepare a weather chart which they share with their peers.

*Teaching Language Arts in the First Grade–Part II.* (V ½, V 1); 25 min., Utah.
Presents additional language arts activities in the same first-grade classroom as in Part 1. The children read the door chart, check a job chart to see if they have been assigned tasks for the day, sign up for school lunch, read about books, write news stories about themselves which they share with their classmates, and finally read poetry together while eating their mid-morning lunch.

*The Teaching Unit.* (V 1); 30 min., South Carolina.
Presents a post-directed classroom discussion between student interns and their professor. The students have just completed their student teaching experience and are relating the principles of the teaching unit to their work as student teachers.

*Team Teaching in First Grade.* (V 1, V 2); 30 min., Utah.
Shows one member of a three-teacher team directing an experience with numbers with the total group of 90 first-graders.

The total group divides into small groups for more intensive instruction, and then the camera focuses on another of the team members. After a brief exposure of the small group situation, the entire class is shown, planning the baking of pumpkin pies. The experience has been designed to bring out fundamental economic concepts such as the division of labor. The final sequence focuses on the third teacher as she demonstrates making stick figures with cut-out paper pumpkin heads. This unstructured observation was produced with the cooperation of the Weber County Exemplary Team Teaching Center. (See "Kinescopes.")

*Team Teaching in Junior High School.* (V1, V2); 30 min., Utah.
Begins with an introduction by the principal of the junior high school, and then goes into a sequence in which one of the team members plays a leading role in a large group instructional situation. An attempt is being made to motivate students for an activity involving retold stories. The class is then divided into smaller study sections, one group of 60 students preparing to retell a story they have selected and read, while another group works with three teachers in paragraph writing. A small group uses the stage area to practice retelling their stories. This unstructured observation was produced with the cooperation of the Weber County Exemplary Team Teaching Center. (See "Kinescopes.")

*Team Teaching in the Secondary School.* (V1, V2); 27 min., Utah.
Uses a structured presentation to show the introduction of a new student and his parents to a team teaching program. Explains the rationale behind team teaching and some of the basic elements of the system. Scenes show students in a resource center seminar and small group activity, individual study projects, and teacher planning sessions. The primary goals of team teaching are identified as: efficient utilization and professionalization of staff, individualization of instruction, and making the student feel personally responsible for his own learning.

*Teaming for Learning.* (V1, V2); 17 min., Utah.
Presents a rationale for individualizing instruction through a team teaching approach. Problems with two students are identified and then resolved by teachers and students working as a team to develop the child's attitude regarding his responsibility for his own learning. (See "Films.")

*Undergraduate Teaching Internships.* (V1); 20 min., Utah.
Focuses on a panel of college and public school personnel as they discuss the relative merits and demerits of undergraduate

internship programs at Brigham Young University at both elementary and secondary levels. Includes an introduction and summary by Dr. Stephen L. Alley, Chairman of the Department of Teacher Education at BYU.

*Using Video Processes in Teaching.* (V1); two tapes, 30 min. each, South Carolina.

Illustrates ten use categories for television in teacher education. Each tape is structured to illustrate five categories, with an introduction to each illustrative segment. This is an attempt to show practically the utilization possibilities of television in the preparation and inservice education of teachers and in the daily teaching tasks of the full-time teacher.

*Vitalize Your Teaching Through the Use of Media.* (V1); 30 min., South Carolina.

Shows the impact that can be made by the effective utilization of audiovisual materials in teaching. Produced in cooperation with Bob Jones University.

6

# Appendix B

## Summaries of Model Programs for Elementary Teachers as Proposed by Six Universities Preparing Feasibility Studies for the Bureau of Research, Division of Elementary and Secondary Education Research, U. S. Office of Education.*

### INTRODUCTION†

The Teacher Education Project is a multi-phase project which has as its goal the production of outstanding, or model, programs for the training of elementary school teachers. This includes the design of the exemplary models, studies of their feasibility, and their eventual implementation and operation. Through these phases, the project will attempt to bring together in a few institutions the best elements of the educational tools and knowledge developed, in many cases with Office of Education grants, in laboratories, schools, and institutions widely scattered across the country. The project is based on the assumption that in a number of years comprehensive programs of development, well-funded and well-conceived, could produce demonstration institutions which will bring about the improvement and up-dating of elementary teacher education.

The reasons for deciding to make the field of elementary teacher education an area for major support are obvious to the educators who work in colleges that prepare teachers. The demand for well-trained teachers remains high. Many of the institutions which have a major responsibility for teacher education are in the same stage of a long transition from normal school to multi-university. New research must be absorbed and adapted for use. There is a demand that the training institutions follow the graduate through the first year of teaching and provide in-service experiences for graduates. All of these problems are in the process of being solved.

At this time it should be clearly stated that in encouraging the design of specifications for model teacher training programs, the U.S. Office of Education and the consultants who have been involved in planning the proposal are aware of the danger of developing a program which would be adequate for the time being but unable to change to incorporate future research findings, utilize the technology of tomorrow, or meet the unrevealed demands which the future will make on schools and teachers. It is hoped that any plan which is widely used will have some built-in arrangement for its future growth, development, and change. There is a general dread of visiting a school which became famous in 1975 and finding there the same program which made it famous virtually intact in the year 2000.

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*In the content of Volumes I and II several references have been made to the model programs.

Abstracts of selected summaries of the U.S. Office of Education's Bureau of Research, Elementary Teacher Education Project have been assembled by the M-STEP staff and reproduced by permission on the following pages. Full reports of each of nine model program proposals can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The reports with order data are listed as follows: Syracuse University (OE-58016) – $4.50; University of Pittsburgh (OE-58017) – $2.50; Florida State University (OE-58018) – $2.00; University of Georgia (OE-58019) – $3.50; Northwest Educational Laboratory (OE-58020) – $6.50; Teachers College, Columbia University (OE-58021) – $4.50; University of Massachusetts (OE-58022) – $4.50; University of Toledo (OE-58023) – $7.00; Michigan State University (OE-58024). The reports may also be ordered through ERIC in either hard center or on microfiche. For information write to: Bureau of Research, Division of Information Technology and Dissemination, Educational Resources Center (ERIC), Office of Education, Washington, D.C. 20202.

†From a Bureau of Research release, October, 1968.

On October 16, 1967, the U.S. Office of Education issued a request for proposals which would develop educational specifications for a comprehensive undergraduate and inservice teacher education program for elementary teachers. (The term elementary teacher included preschool teachers and teachers through grade 8).

These proposals were for Phase I of the project, the design phase. On March 1, 1968, the Bureau of Research awarded nine contracts to design conceptual models for programs for the training of pre-kindergarten and elementary school teachers, for the pre-service as well as inservice components. These models are to be completed by October 31, 1968, and their specifications will be the blueprint for the exemplary teacher training programs.

In Phase II approximately ten institutions will carry on studies directly concerned with the feasibility of developing, implementing, and operating a model teacher training program based upon the specifications designed by one or more of the groups engaged in Phase I. This is to be done through an analysis of the resources, including costs, needed for the various components of such an institution. Analyses must also be made of the appropriate administrative and management structures and devices which would be used to initiate, carry on, control, and evaluate a long-term program of development. These detailed analyses should provide alternate cost projections necessary to implement and operate any or all of the components at other institutions of varying characteristics.

The task of an applicant for Phase II is to describe in its proposal a model teacher training program based upon the specifications designed by one or more of the groups engaged in Phase I. The remainder of the proposal then becomes the design for a feasibility study of developing, implementing, and operating such an institution.

## SUMMARIES OF FINAL REPORTS

### FLORIDA STATE UNIVERSITY

The preparation of elementary school teachers undoubtedly is one of the most critical tasks for our society in the decade ahead. The elementary school teacher is coming to be perceived less as a kind-hearted craftsman and more as a skilled professional person. Indications are that this shift in perception is essential in light of the growing demands and expectations placed on the elementary school, and thus on the elementary school teacher. The challenge is to find ways to prepare elementary school teachers who will be adequate to the task of teaching as it is coming to be. This model program represents the efforts of an interdisciplinary team to design a preparation program for elementary teachers which will meet the expectations of society and the demands of the school in 1978. It provides specifications that should be helpful to the designer of new, forward-looking teacher education programs.

The model program described in this report is characterized by a number of unique features:

1. *Utilization of performance criteria.* A series of experiences designed to enable trainees to meet stated performance criteria will be developed to replace formal courses.
2. *Individual progress rates.* Trainees will be permitted to move from one experience to the next when they have demonstrated the ability to satisfactorily meet performance criteria.
3. *Immediate application of theory to practice.* Trainees will have an opportunity to try out new theoretical learnings about teaching immediately through extensive use of small to large scale teaching activities.
4. *A repertoire of technical skills.* Trainees will be taught the technical skills of teaching and will be helped to integrate these into a total teaching performance.
5. *Preparation extended into initial teaching years.* An in-service phase, implemented jointly by the preparing institution and selected school systems, is an integral part of the total model.
6. *Computerized management control system.* A management control system utilizing a computer will be used to monitor individual trainees' progress and to make information available to staff and trainees as required.
7. *Faculty development and utilization.* The need for faculty retraining consistent with the demands of new roles in the model is recognized and provided for.
8. *Selection of trainees for preparation.* A direct effort is made to describe a selection system reflective of the performance criteria deemed necessary for teaching.
9. *Acceptance of specialization.* The desirability and necessity for specialization in elementary school teaching is accepted and planned for in the model.

### *Rationale*

The rationale for this model program is based upon:

1. Predictions of what society and education will be like in 1978;
2. Inferences about the nature of teaching and the role of the elementary school school teacher by 1978; and
3. Implications for the preparation of elementary school teachers.

At best the prediction of things to come is risky. Assuming the absence of any catastrophe which would block the forward thrust of our national progress, however, certain specific predictions relative to the preparation of elementary school teachers can be made.

### *Predictions for Society by 1978*

Our predictions for society by 1978 are:

1. The trend toward urbanization will be accelerated.
2. Traditional wisdom and values will be increasingly challenged and the voices of protest will demand public response.
3. The identity of the individual will merge increasingly with that of one or more groups.

4. The factors which tend to alienate young people as a group will continue to operate.
5. Political issues will increase in complexity so that sounder judgment and greater integrity will be required of both citizens and leaders.
6. A massive effort will be made by the Federal Government to alleviate social ills.
7. The influence of pervasiveness of multiple mass media will keep a broad range of issues before the public.
8. Science and technology will continue to be dominant forces in our lives, creating problems and offering solutions to problems over a wide front.
9. The international character of life will influence social, political and economic affairs in a striking way.

### *Predictions for Education by 1978*

Our predictions for education by 1978 are:

1. Society will make increased demands upon schools and colleges to fashion programs to meet the needs of all of its people.
2. The fact that education will be increasingly society-oriented will aggravate the tension between educators and the general public.
3. Education will meet society's demands through increasing attention to the individual.
4. Each major level of organized education will see itself as capable of managing its own program planning, and teachers at each level will seek autonomy over a greater range of matters important to them than ever before.
5. Curriculum developers in elementary and secondary schools will try to overcome extreme separate-subject-centeredness and move toward a more interdisciplinary design.
6. Schools, especially in the inner city, will have to relate more directly to the total environment.
7. Emphasis will be placed on relevance in learning.

### *Inferences about Elementary School Teaching by 1978*

Our inferences about elementary school teaching by 1978 are:

1. Only broadly educated persons of high ability will be able to make the difficult decisions required of elementary school teachers.
2. The emerging role of the elementary school teacher will require depth of study in at least one academic area and competence in employing a wide range of teaching strategies.
3. The elementary school teacher will have to be able to work as an effective team member with other professional and para-professional personnel.
4. Initial training requirements will call for a pre-service--in-service continuum of experiences.
5. The elementary school teacher will need to view the elementary school as an institution in almost continuous transition and come to expect and cope with educational change accordingly.

### *Task Analysis of Teaching*

The decision to use a systems approach in determining the specifications for this model training program required a more careful and detailed analysis of the component behaviors in teaching than these predictions and inferences provided. Therefore, a task analysis of teaching as forecast for 1978 was undertaken. Four essential teaching behaviors resulted from this:

1. The teacher will plan for instruction by formulating objectives in terms of behavior which is observable and measurable.
2. The teacher will select and organize content to be learned in a manner consistent with both the logic of the content itself and the psychological demands of the learner.
3. The teacher will employ appropriate strategies for the attainment of desired behavioral objectives.
4. The teacher will evaluate instructional outcomes in terms of behavioral changes.

These behaviors are clearly interdependent. As shown in Figure 1,* they are directly concerned with instructional-curricular functions. Still, only the behaviors which have to do with employing teaching strategies specify interaction with the learner. Students can be active in the formulation of objectives, in content selection, and in planning some and undergoing nearly all kinds of evaluative activities, but the teacher behaviors required for competency in dealing with objectives, content, and evaluation are primarily analytical skills rather than interactive ones. The component behaviors in strategy tasks involve interacting with pupils as they deal with content and material which will produce and reinforce appropriate learning behavior.

The task analysis engaged in did yield a fifth category of teacher behavior, but of a somewhat different order than the four already mentioned. This fifth dimension of teacher behavior is stated as follows:

5. The teacher will demonstrate the competence and willingness to accept professional responsibilities and to serve as a professional leader.

This behavior, too, is attended to in the model program. It is felt that this dimension of teaching behavior will be of the utmost importance by 1978. Ways of achieving it are therefore specified in this report.

Figure 2 shows a graphic presentation of the way in which the model program staff moved from predictions about society and education in 1978, to inferences about the nature of teaching and the role of the elementary teacher in 1978, to implications for his preparation, and to the specifications presented in this model program.

### *The Curriculum*

A three phased program, consisting of an underclass phase, a pre-service phase, and an in-service phase, was designed to develop the behaviors outlined above. (See Figure 3.)

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*See original Reports for all references to Figures.

### *Underclass Phase*

The underclass phase of the program, which represents what would normally be the first two years of college, concentrates mainly on general education.[1] The stand has been taken that the elementary teacher by 1978 must be a broadly educated person. The underclass phase of the program is perceived as making a major contribution to that requirement for the trainees.[2] The underclass phase of the model will also incorporate pre-professional studies to include work in the behavioral science, and an early awareness-involvement program designed to inform prospective teacher candidates about the role, demands, and rewards of teaching, and to provide them with a basis for making a commitment to the preparation program and to service in the profession.

### *Pre-Service Phase*

The pre-service phase of the program begins after admission to the program, usually the beginning of the junior year, and continues through the completion of the bachelor's degree and the granting of provisional certification. The amount of time actually spent in the pre-service phase will vary from individual to individual. Emphasis during this phase will be on professional preparation; i.e., undergoing experiences designed specifically to prepare the trainees to fulfill the professional duties of teachers. Candidates will also engage in study to develop an area of academic concentration[3] and to pursue elective interests.

Built on the five teaching behaviors identified earlier, success in the pre-service phase is dependent upon the ability of the trainee to state objectives, select and organize content, utilize appropriate strategies, utilize evaluation techniques, and demonstrate a willingness to provide leadership and professional responsibilities consistent with stated performance criteria.

### *In-Service Phase*

The in-service phase of the program will begin with the awarding of the bachelor's degree and extending through two school years and three summers, culminating in the master's degree and full professional certification. During the academic years, the trainees will be employed as teachers, with some time set aside for the study of problems encountered in the teaching environment. Three summers will be spent on campus. The goals to be achieved in these summer sessions are: to extend systematically the trainees' competence in areas such as the psychological, sociological, and philosophical foundations of education; to help them to become more aware of and competent with the several dimensions of professional leadership responsibilities; and to enable them to pursue an appropriate area of specialization from the point of view of role differentiation. A part of each summer, and especially the first one, will be devoted to preparation for the upcoming teaching assignment in the schools.

It is planned that the university will assume a major role along with the public school system for planning and executing the in-service phase of the program during the two academic years the trainees are teaching. The university will not attempt to dictate the nature of the program, but will rather enter into a cooperative arrangement with the local school system for planning a program appropriate to the needs of the local school system which at the same time will be consistent with the goals of the model program. The university will commit itself to provide an appropriate share of human and financial resources for this part of the in-service phase.

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[1] General Education: studies in history, the humanities, the natural sciences, and the social sciences.

[2] Trainee: teacher candidate; college student enrolled in the pre-service or in-service phases of the program.

[3] Area of Concentration: academic area, as art, mathematics, natural science, social science.

### *Specialization*

There is a specialization dimension in the model program, too. Overall, the program is designed to prepare teachers to work with pupils who range in age from three through about thirteen. There will also be opportunities for some work in all of the subject matter areas normally encompassed in the elementary school curriculum. Thus, all teacher candidates[4] will be helped to develop a common general background relative to content areas and understanding of elementary school age pupils. However, to provide the level of competency which will be needed by the teacher in 1978, three kinds of specialization will be provided for in the program. Each teacher candidate is expected to make a decision about these specializations.

First, trainees will select the age group with which they want especially to work. Since the emphasis in the program will be on the continuity of programs covering the complete range of ages, there will not be rigid, artificial divisions of the age groups. Two broadly defined age groups will be used: Pupils ages three to eight or nine (or early childhood), and pupils ages eight or nine to about thirteen (or later childhood). The choice made will be reflected in the nature of the training experiences provided for the candidate.

The second area of choice for specialization will center on an academic subject. All trainees will have a reasonable knowledge of each of the subject matter areas included in the elementary curriculum, but they will be expected to select at least one area for special duty. It is expected that this area will be an extension of study begun in the underclass phase.

The third area of specialization will be concerned with differentiated teaching functions. The equivalent of one summer during the in-service phase will be devoted to role differentiation. Care will be taken to ensure that each trainee has a clear understanding of such current and emerging roles in education, as programmer, media specialists, and content area resource teacher.

This program will have enough flexibility to permit other specialist variations. For instance, a trainee could make a specialty of becoming a master teacher in an inner-city school, or a master teacher with exceptionally able children, and the like.

## *Facilitating Components*

### *Admissions and Screening*

The admission and screening procedures of the model program were designed to select for the program those candidates who show evidence of capability to meet performance criteria as stated and who demonstrate a commitment to complete the program and to remain in teaching. Research evidence relative to predicting teacher effectiveness, success, and perseverance rate to date has been inconclusive. Therefore, it is seen as necessary in this model program to establish a data bank on which to base studies to improve predictions in the future.

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[4] Teacher candidate: trainee, college student enrolled in the pre-service or in-service phase of the program.

Immediately, upon being admitted to the program, the teacher candidates will be assessed against certain pre-determined entry skills and knowledges in each of the areas included in the elementary school curriculum. Provisions will be made to enable trainees with deficiencies to engage in study to overcome them while beginning the pre-service phase. Screening from the program will be done on the basis of inability to meet stated performance criteria. Every effort will be made to provide feedback to trainees on the quality of their performance on a regular basis so that they may judge for themselves the nature of the progress they are making.

### *Staffing*

A major characteristic of the model program is its design for staffing. Many of the roles required in this program are new to professional teacher education. Therefore, the retraining of faculty becomes a major problem. In addition to the problem of staff development, the program directs itself to new staff requirements, staff organization, and staff utilization arrangements.

A variety of new roles will emerge within a college of education as traditional courses are abandoned and experiences oriented to performance criteria replace them. Three major types of assignments have been identified for faculty in the professional component: administration-student personnel; teaching-counseling; and selecting and producing materials.

It is expected that most members will, during the course of an academic year, work in two types of assignments. Typically, a faculty member will serve as a teacher-counselor and, either an administrator-student personnel worker or a selector-producer of materials. The team concept will be utilized for much of the operation by grouping faculty members from various backgrounds and with unique strengths to take responsibility for certain areas of the training program.

The proper organization of the staff will require the support of the university administration. It is likely that at least some of the faculty will be on joint appointment either between some departments of a college of arts and sciences and the teacher education program, or between some department within a college of education and the program.

## UNIVERSITY OF GEORGIA

### *Planning Procedures*

*Job Analysis.* The basic approach was to analyze what must be done by the teacher to cause elementary children to advance on the learning continuum, and to provide cognitive and affective experiences specifically intended to produce teaching behaviors. The initial step in determining specifications for a teacher education program was to define the role of the teacher. Only by defining the job could the competencies necessary to perform specific tasks be adequately determined. The content of a teacher education program should be based on the teaching act itself.

The analysis of the teacher's job (see Figure 1) began with a determination of goals for the elementary school. This was followed by the identification of objectives which would translate goals into the school setting. Objectives were developed in each content area, and for cognitive processes, attitudes, and values. How the pupil behaves in order to achieve learning objectives was determined. These learning behaviors provided the basis for determining teaching behaviors.

Teaching behaviors alone could not provide the total content for a teacher education program. Also relevant were general instructional principles, teaching principles, learning principles, and organizational principles. These principles provided certain teacher objectives and additional teacher behaviors which, in turn, provided an additional basis for the job analysis. Knowledge from educators in the field, plus knowledge of the nature of the child and how he learns, provided further information for the job analysis.

The teacher education program should also attempt to develop a teacher with adequate personality characteristics. Consequently, humanistic learnings, attitudes, and values were incorporated into the program. It is acknowledged, that evaluative criteria for measuring attainment in these areas are inadequate. Despite this problem, the indicators are that the personality development of the teacher is as important as his intellectual development, and demands its inclusion in the model.

*Job Description.* The analysis of the job of the elementary teacher led to a job description which resulted in the categorization of teaching tasks into four levels: aide, teaching assistant, elementary teacher, and specialist. The reader will recognize that most teachers in the elementary school today are responsible for all of the tasks in the job description except those of the specialist. However, experience with teacher aides and interns has shown that differentiated use of staff is feasible in using time and talent more efficiently.

According to this classification, the aide will perform a variety of important non-instructional tasks and activities under direction of an experienced teacher. A person at this level will primarily be concerned with gaining experience in the school setting.

The second level of proficiency among elementary school personnel is that of teaching assistant. The teaching assistant will perform both instructional and non-instructional duties, thus assuming a more complex role. The teacher assistant will generally be directed by the teacher, with responsibility for initiating and executing a variety of tasks. These tasks can be performed by an individual with about half the degree and certification requirements of a fully trained teacher.

Completion of the pre-professional program will provide the student with competency for paraprofessional service as a teaching assistant in the elementary school, the associate's degree, and the basic prerequisites for admission to the professional program. The pre-professional program will require approximately 18 months for completion. After 9 months the student will be competent to serve as a teacher's aide. About 90 percent of the experiences provided in the pre-professional program will be in general (liberal) education. Ten percent of the experiences will be in paraprofessional and basic professional. Approximately 12 weeks of on-the-job paraprofessional training will be required of the student, 6 weeks occurring about mid-way in the first half and 6 weeks about mid-way in the last half.

The professional elementary teacher will have completed the requirements for a bachelor's degree and for certification. The tasks performed at this level will be largely instructional, with some time spent in essential non-instructional activities. The professional program also provides the student with prerequisites for admission to the specialist program.

The professional program will require approximately 22 months for completion. Approximately 25 percent will be on general (liberal) education requirements, 30 percent on what is called an area of competency, and 45 percent to professional education. An area of competency is a teaching area in which the general elementary teacher has more knowledge, understanding, and skill than in others.

During the program the average qualified student will have three on-the-job practical laboratory experiences of approximately six weeks each in elementary schools, each with different age groups. Placement in these laboratory experiences will be such that the students will have opportunities to work with children of various socioeconomic and ethnic characteristics.

An internship of approximately ten weeks will be required near the end of the professional program. This will be in an elementary school setting with children of an age range which meets requirements of certification for which the student is working. Special attention will be given to provide the student with opportunities to use the knowledge, understandings, and skills acquired in their areas of competency, *i.e.*, assisting in the preparation of materials which require more than usual understanding of a particular area.

The specialist will represent the highest level of competence. The specialist will engage in certain activities with children, with other school personnel, and with other people apart from these groups. The activities will be instructional as well as non-instructional. However, the specialist will have no significant non-instructional responsibilities with children. Rather, competence in working with children and in providing leadership and service to other school personnel will characterize the specialist. This person may occupy both teaching and specialist roles as a professional team member, or may perform the appropriate tasks from a central-office location.

The specialist or inservice program provides the student with the specialist's degree in one of fifteen areas--either in one of the eight areas of competency characteristic of the professional program or in human development and learning, instructional media, pupil personnel, curriculum and program development, school-community relations, evaluation, and professional development.

Approximately 50 percent of emphasis will be devoted to the area of specialization, 40 percent to common experiences required for all specialists, and 10 percent with local conditions or exploratory experiences. Specialization for laboratory experiences requires all persons enrolled in the specialist program to be currently on-the-job practitioners or to have access to the special laboratory facilities needed. Arrangements for continuous field experiences will be made cooperatively between the program directors and the administrators in the field.

*Performance Specifications.* As a result of the job analysis, performance specifications (teacher competencies) were developed. In addition, the job analysis determined specifications for selection, program design, and evaluation.

Performance specifications form the core of the model. These are statements which describe a particular competency, or competency requirement, that a teacher should possess in order to operate at optimum effectiveness in a teaching-learning situation.

Specifications were prepared for the teaching assistant, the teacher, and the specialist. Generally, the teaching assistant should exhibit the specified behaviors after two years in the program; the teacher after four; and the specialist after six.

Some 2,000 specifications for teacher performance have been developed in the following categories:

Drama
Composition
Cognitive Processes
Psychology
Educational Tests and Measurement
Pedagogy
Social Studies
Speech
Reading
Literature
Listening
Mathematics
Media
Science
Instructional Improvement and
  Professional Development
Specialized Training
  Related to Local
  Conditions
History of Religion
Art
Music
Health
Physical Education
Philosophy
Guidance and Counseling
Social Foundations of
  Education

The system for classifying these was based on taxonomies (Bloom, Krathwohl) to designate the intended behaviors of students that would result from specific learning experiences. Categories in the cognitive domain include: (a) knowledge, (b) comprehension, (c) application, (d) analysis, (e) synthesis, and (f) evaluation. Those in the affective domain are: (a) receiving, (b) responding, (c) valuing, (d) organization, and (e) characterization.

## ORGANIZATION OF TRAINING

*Organization and Presentation of Content.* Before decisions were made with regard to how content was to be organized and presented, the staff established principles which it used for criteria. It included among others the requirements: (a) that the model program should be systematically planned in terms of goals and contain objectives so stated that they may be reduced to behavioral terms, (b) that content should be organized in accordance with what is known regarding how the content is most effectively learned, (c) that instruction should be controlled by an achievement or mastery variable (rather than a time variable), (d) that content should be organized in such a manner that practical applications and basic theoretical concepts are introduced concurrently, with stress being given to their interrelationships, (e) that more complex theoretical considerations should be undertaken only after basic practice and theory have been assimilated, and (f) that content should be so selected as to give appropriate relative emphasis to all objectives, including those related to the subject matter, thought processes, skills, and attitudes regarded as essential for effective performance of the teacher, both as an intelligent member of society and as a teacher.

Confronted with these and other criteria, the staff set about to develop a system which would, to a large extent, reflect the ideals it sought to fulfill. In answer to this need, the staff created a vehicle which it specifies as an essential feature of the program--the proficiency module (PM).

*Proficiency Modules.* A proficiency module is defined as a published guide to direct individual student learning behavior in studying particular subjects or topics or in undertaking particular activities in laboratory situations. The proficiency module is a means of organizing various sizes, kinds, and clusters of content for instruction in such a manner that it is assured that the student either has acquired the content of the module, or that he will do so by carrying out the instructions contained in it.

The content for any PM is a selected cluster of related teacher performance behavior including not only definitions, facts, and concepts, but also thought processes, motor skills, and attitudes. The core of the PM, insofar as the student is concerned, is a series of learning tasks prepared by specialists. These tasks are carefully designed and arranged in such a manner that they are regarded as the most effective known means of guiding students toward the acquisition of the performance behaviors. These tasks provide multiple sequences for the attainment of the desired end in such a manner as to make them adaptable to individual differences among students in such characteristics as rate of learning, sensory sensitivity, and cognitive styles.

When properly constructed, PMs avoid duplication of content among offerings and permit the student to move through the program at a pace which is both comfortable and challenging to him. A qualified student may move as rapidly as he is capable of moving or as slowly as is necessary for him to move in meeting the specific requirements.

PMs are classified by *types* and *blocks*. The term *types* refers to classes of PMs which group themselves around common functional relationships such as basic PMs required for all students in the pre-professional program or PMs required of all students enrolled for a particular area of competency. The term *blocks* refers to clusters of PMs which must be taken in sequence. For example, there are six PM blocks in the pre-professional program and ten PM blocks in the professional program. The student must meet the level of proficiency required in all of the PMs of any block before he may move on to the next one. PMs are constructed in accordance with the specifications of the report.

*Laboratory Facilities.* The model specifies the need for five kinds of laboratory facilities: (a) *General Resources Laboratories* which include facilities used by all students of universities, colleges, and schools such as central libraries and computer instruction centers, (b) *Instructional Unit Central Resources Laboratories* which house and provide all learning materials and equipment essential for the undertaking of PMs within particular areas which are not readily or conveniently available in General Laboratories, (c) *Instructional Unit Field Laboratories* which provide field facilities as needed, (d) *Clinics* in which remedial services are provided when required, and (e) *Instructional Unit Interaction Laboratories* which arrange for such activities as special lectures, seminars, workshops, and recitals.

*Orientation.* An orientation program is required for students during the first week of the pre-professional program. It is during this period that students become acquainted with such matters as the nature of the program, the individualized features of instruction by PMs and the location and operation of special facilities. Also, during orientation the students meet with their advisors and are introduced to their first block of PMs. Since the program is individualized, orientation beyond first enrollment is conducted through advisor-advisee conferences.

*Standard Tasks.* As a part of the admission procedure, an interest inventory, personality schedule, and biographical information blank are administered. During training, the affective domain is appraised predominately in laboratory experiences. In the pre-professional program, students are assigned standard tasks of a paraprofessional nature. Examples include:

1. Oversees pupils engaged in games familiar to them.
2. Observes pupils with an observation schedule and reports results.
3. Catalogs and files series of training materials.
4. Helps pupils locate learning resources.
5. Makes the height and weight measures of pupils and records them.

Standard tasks suitable for students completing the first half of the professional program are:

1. Interviews the pupil to gather information requested in a biographical information blank.
2. Administers a standardized test to define the pupil's achievement in:
   A. Word knowledge
   B. Reading ability
   C. Arithmetic skills
   D. Language skills
   E. Study skills
3. Prescribes pupil learning behaviors.
4. Guides pupil in mastery of behaviors.
5. Administers mastery test and evaluates results.

These standard tasks will be appraised by whatever techniques are appropriate. For certain tasks (such as preparing a training aid) there are end products to evaluate. Other tasks follow routine procedures and can be evaluated by a check list, such as the tasks of cataloging and filing materials. Some task performance can be checked for accuracy, for example, measuring height and weight, and scoring routine pupil work assignments. Other tasks require ratings.

*Internship Measures.* One of the principle approaches used during the internship program is the microteaching technique. This technique involves clearly defined teaching skills in presentation, stimulus situation, reinforcement, questioning, and closure. The student is presented with the techniques, applies them in small groups and is provided immediate feedback by means of video-tape. Supervisors evaluate the performance.

*Critiques.* After all proficiency module measures have been administered for a given block of the program, the progress of the student is reviewed by an advisor. The advisor critiques performance in this PM block, using all data available. The student is either permitted to advance to the next block, is retained for further training, or is referred for special advisement. Progress reviews and possible routes are shown in Figure 9.

*Other Evaluative Measures.* Other criteria for evaluation include such conventional measures as elementary school achievement batteries, parental attitude scales to measure the parents' attitude toward the goals of the system, and peer ratings to appraise how contemporaries regard the teacher's effectiveness. Supervisory ratings will deal with effectiveness and proficiency in performing assigned tasks.

## UNIVERSITY OF MASSACHUSETTS

### *M.E.T.E.P. Assumptions*

The University of Massachusetts' Model Elementary Teacher Education Program is an attempt to institutionalize change through a thorough analysis of educational roles, tasks, structure and objectives. It is based on seven overriding assumptions.

A. The role of the elementary school teacher is changing and will continue to change in the future. We must prepare teachers for change and not stability. The concepts of performance criteria, multiple instructional routes, differentiated staffing patterns, and continual inservice training programs appear to offer a meaningful approach to education in the future.

B. Specific performance criteria, based on an analysis of knowledge, skills, and attitudes in the human relations, behavioral, and content areas should be identified to provide a flexible basis for change. When the trainee meets the specified criteria requirements he will have completed the program, regardless of the length of time enrolled. Thus, variable entry and exit points in programs will occur.

C. Elementary school staffs will begin to differentiate their roles as teachers, thus requiring personnel with different competencies in new and different areas of specialization. Special consideration of differential staffing seems essential in the schools of the future.

D. Since there is no real evidence of the efficacy of any one major strategy of teacher training, this program includes as many widely differing overall strategies as possible in order to provide for examination of training consequences, for insights into relative training efficiencies, and for discovering relative acceptance and appreciation of the processes by trainees.

E. On the assumption not only that each trainee's strengths and weaknesses will differ but also that they will change during the program as a desired consequence of training, one major goal is to provide continuous diagnosis of the needs of each trainee and constant evaluation of the program components designed to meet these needs. Cronbach's concept of Aptitude-Treatment Interaction as an important research component of the program.[1]

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[1] Lee J. Cronbach, "How Can Instruction be Adapted to Individual Differences?" *Learning and Individual Differences*, ed. Robert M. Gagne, Columbus, Ohio, 1967.

F. As a consequence of the above goal, one of the most important emphases throughout planning will be the development of multiple program alternatives, so that there are never fewer than two alternative and instructional paths to the same objective.

G. In most teacher-training programs the university's commitment ceases upon graduation. The graduate rarely receives diagnostic help, but instead is merely evaluated. It is the belief of the designers of this program, on the other hand, that a teacher's training never ends, and therefore a closely knit relationship between preservice and inservice training will be developed. The resources of the University, both technological, such as videotape, and human, such as supervisor, will be systematically made available to the graduate. In addition these same resources will be made available to other teachers in the area.

### *M.E.T.E.P. Parameters*

To visualize the METEP image it as a flowing stream ever growing as it moves toward its goal. (See Figure 1) The main stream is the METEP. The off-shoots, which also are constantly growing, represent performance criteria in the areas of competencies which a differentiated staff in an elementary school might possess. There is nothing fixed about these areas of competencies. It is expected that more competencies would be added as needed, and some might be deleted. At the present, however, these are the areas in which teachers would receive training in our program. Other institutions might define different areas of competencies which they felt to be more appropriate.

The areas of competencies for which performance criteria have been written are:

1. Human Relations
2. Behavioral Skills
3. Science
4. Language Arts
5. Mathematics
6. Aesthetics
7. Social Studies
8. Foreign Languages
9. Evaluation
10. Media
11. Supervision
12. Pre-School
13. Technology

### *Cornerstone Criteria*

The first two, *human relations* and *behavioral skills*, are considered to be the cornerstone areas for elementary school teachers. It is in these two areas of competencies that the teacher will better understand himself, others, and his relationships to others, and where he will master teaching skills to help him to become an effective teacher.

### *Content Criteria*

*Science, language arts, mathematics, aesthetics, social studies*, and *foreign* *languages* represent content areas which form the curricula in most elementary schools. In addition, a program in *pre-school* education will be part of our teacher education program.

### *Supplementary Criteria*

The *evaluation* area includes performance criteria for the teacher in tests and measurements as well as skills required to make decisions on whether to implement new curricula. The *media* area contains criteria from simple to complex understanding of the area of audiovisual media. The *supervision* area contains criteria for the effective training of supervisors in the elementary schools. Criteria in the area of *technology* also have been written as required supplements to any of the regular areas of concentration. Since our world is increasingly a technological one it is deemed desirable that a rudimentary knowledge of technology become a part of every teacher's training.

### *Specialist - Generalist*

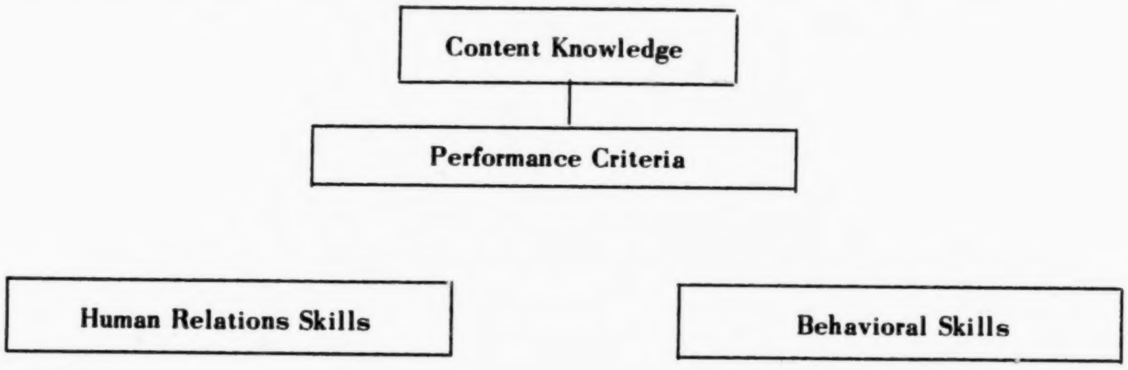
The performance criteria in each area are defined whenever possible, in a hierarchical order from the simple to the more complex. Note in Figure 1 that the words Generalist and Specialist appear along the vertical dimension of the figure. The teacher trainee would have the opportunity to decide if they wanted to specialize in a particular area or to be a generalist elementary school teacher with certain levels of competency in each of the areas. If a trainee elects to specialize in science, for example, he would be required to meet certain minimal criteria in the human relations and behavioral areas, a high level of criteria in the area of science as well as defined minimal levels in all of the other areas. (See Figure 1) Requiring every teacher, whether he is a generalist or a specialist, to meet a minimal criteria level is a value judgment with which some teacher educators may not agree. The rationale for this requirement is our belief that every elementary school teacher should know at least something about the various areas of competency represented by a differentiated staff, if for no other reason than to improve communication and open-mindedness among the teachers. This decision is an arbitrary one and any institution planning on implementing this model would have to decide this issue for itself.

It should be noted in Figure 1 that the areas of competency are not closed figures, but are open at the top. This symbolizes the fact that in any one area a person could spend a lifetime and not be able to meet all the possible criteria which could be written as more information and skills become known and developed. It should also be noted that there are some blank off-shoots from the main line. These represent the other areas of competencies which can be developed as the elementary school changes.

### *Performance Criteria as a Planning Principle for a New Model in Teacher Education*

The formulation of performance criteria requires the specification of instructional and program goals in terms of behaviors to be exhibited by the trainee when instruction has been completed. Performance criteria, as we have defined them, are essentially behavioral objectives. They state the behavior expected of the teacher, under what conditions the behavior will be performed, and how the behavior will be evaluated. In addition, at least two instructional alternatives are provided for each performance criterion. Careful formulation of performance criteria liberates the planners from describing the program in terms of traditional "courses." Rather it is recognized that there are alternative paths to reaching many of the criteria. The development of meaningful criteria and the alternative paths for meeting these criteria has been of central concern to the architects of this program.

Performance criteria have been developed in three broad conceptual areas related to teaching (1) content knowledge, (2) behavioral skills, and (3) human relations skills.



### *Content Knowledge*

The restatement of content requirements from course requirements for a specified period of time to performance criteria which emphasize *ability to perform* was the major thrust in the planning stages of METEP. It is believed that recognition should be given to the fact that content knowledge is dervied from many sources, formal coursework being only one.

Content knowledge is defined to include the depth and breadth of content most often seen as deriving from undergraduate liberal arts courses as well as the kind of content knowledge most often associated with that acquired within a School of Education. The latter is seen as a logical extension of the former, inseparable, but focused on questions of relevance and conceptual organization for pupils at the elementary level.

### *Behavioral Skills*

One of the basic goals of the teacher education program is the development of technical skills of teaching. The basic premise of the technical skills approach is that much of teaching consists of specific behavioral acts. If skills and behaviors which teachers perform often in the classroom can be identified, different training protocols or established procedures and techniques can be developed in order to produce proficiency in their use. In other words, much of the complex act of teaching can be broken down into simpler, more easily taught skills and techniques.

One of the main components of the proposed teacher education program will be the implementation of microteaching in order to train prospective teachers in the technical skills which have been identified.

### *Human Relations Skills*

Human relations is not a mysterious activity. Rather it is a codifiable set of behaviors which describe what goes on inside a person or between people.

> Human relations is defined as behaviors exhibited in relation to self and other individuals, and in relation to groups.

Thus, an individual thinking about himself or simply sitting by himself is engaging in human relations behavior. Two individuals meeting in an interpersonal interaction are engaging in human relations behaviors. School classrooms or group dynamics sessions are situations in which an awesome number of human interactions are going on. In short, any human behavior or behaviors engaged in intrapersonal or interpersonal activities represent human relations behaviors.

Human relations have been defined in the past almost always from a value framework. Somehow, human relations is seen as a "good" thing. Thus, traditional definitions of human relations tend to center on what should be rather than what is. By doing so, human relations experts have tended to confuse the present with future goals. The aim in this proposal is not to avoid the value issue of what human behavior should be, but simply to report what is actually present so that better specification of future goals may be present.

The Model Elementary Teacher Education Program does have many specific value commitments as to the type of human behaviors considered desirable for elementary teachers. Some of these are well known constructs such as warmth, critical thinking, openness, and consciousness of cultural differences. These concepts, however, have been defined within behavioral terms and specified so that it is possible to teach these behaviors directly instead of by admonition, example, or as is done more commonly, by chance. Some new constructs such as attending behavior, decision process, and the physical system are introduced by adding more precise definition of human relations behaviors. Wherever possible human relations behaviors have been introduced in a hierarchical structure so that the teacher trainee increasingly learns how to integrate old behaviors into new patterns.

The METEP is interested in producing the fully human teacher, a person who meets the human criteria of warmth of human understanding, but is also capable of rigorous thinking, is in control of his own behavior, and is in a constant pattern of growth. These are high objectives for teacher training, but it is believed that education, psychology, philosophy, and behavioral technology are at a stage whereby the effectively trained teacher can now be a human relations expert in addition to having content knowledge and presentation skills.

### *Inservice*

Existing inservice education programs seem to be based on the belief that the completion of preservice training and bestowal of a teaching credential creates a lifetime of professional competence and that any inadequacies in a teacher's preservice training will leave a lifetime of irremediable professional handicaps. It is apparent that our present compartmentalization of preservice and inservice education must be replaced by a new perspective which views the intellectual and practical development of educators as occurring along a continuum beginning with the decision to enter the teaching profession and ending only upon permanent retirement.

The METEP has developed a set of guidelines for such a preservice - inservice continuum. These guidelines are based on the use of hierarchies of performance criteria for two distinct but interrelated purposes: (1) diagnosing individual teacher education needs and prescribing from a number of learning alternatives deisgned to remediate those needs, and (2) evaluating teaching competency and growth as a teacher in order to determine initial placement and career advancement within a differentiated staffing structure.

Operating within the perspective of a differentiated teaching staff structure fosters the recognition of significant distinctions among teacher roles - and it is at that point that we are able to begin developing the performance-based task delineations which will provide the key to a relevant inservice education program. As differentiated staffing becomes a possibility, then carefully thought out performance criteria for teachers becomes a necessity. A school which allows for the possible diversity of teacher roles is uniquely motivated and able at analyze and reformulate the criteria by which it can judge competence in any given task. With such criteria, teacher training, both at the preservice and inservice levels, becomes closely integrated with the main concern of all educators - - the educational development of students.

If teacher education is reorganized so that continuous relevant growth experiences are provided for teachers throughout their careers, then preservice education and inservice education will become a part of the same continuum. It simply will not do any longer to separate preservice from inservice experiences. We must, in the process of specified teaching performance criteria, set out our priorities in such a way that credentialing procedure becomes a formality and professional growth becomes the criterion of all training experiences. Whatever criteria we settle on for preservice programs, and whatever training procedures we judge relevant at that level, must be applied and extended in our inservice programs. Insofar as we insist on the distinction between preservice and inservice training techniques we simply reveal our ignorance of systematic criteria by which we can assess the professionalism of our teachers. But as soon as we give serious attention to the development of such criteria the distinction becomes meaningless. The point here is not that the preservice and inservice training are, or should be, identical. Rather, it is that the procedures and goals of each must become specific and defensible in a way that they currently are not. We must make some tentative decisions regarding what criteria a teacher should meet before reaching a credential and what criteria should be met later as part of his inservice professional growth. With such modifiable decisions at hand we can begin to design inservice programs which have the continuity and rationality so clearly lacking in most current approaches.

### *System Conceptualization of The Model Elementary Teacher Education Project*

How can teacher education best be conceptualized? We have developed many models over the years, but inevitably have returned in practice to traditional forms of teacher education. As performance criteria were developed by the project staff, it became increasingly apparent that a totally new approach to the organization of teacher training was necessary.

Systems analysis has proven to be the most useful method of organizing performance criteria. To develop a teacher (or to use the words of a systems analysis, "product") of maximum effectiveness both to himself and society, we must consider the many inputs and outputs of the person, of the teacher education program, and of the schools in which the teacher is eventually placed. Further, we must consider the ways in which these three major components interrelate among themselves. Systems analysis provides the most comprehensive method of organizing objectives presently available.

The subsystems which compose the METEP are indicated below. In addition, they are represented schematically in Figure 3.

A. *Control Subsystem:* This subsystem performs several functions which are involved in maintaining the day-to-day operation of the Model Elementary Teacher Education System. It is the process controller and is responsible for insuring that the system remains in a stable state and operates in an optimum manner. It carries on a continual analysis of collected data and uses this analysis for decision-making. The subsystem provides immediate feedback for system control. It is concerned with the following functions:

1. Aptitude Assessment
2. Guidance
3. Scheduling
4. Attitude Monitoring

B. *Administrative Subsystem:* The functions performed by this subsystem include the supplying of materials, staff, and paraprofessionals necessary to operate the program, management and allocation of funds for operating the program, and coordinating the program with the rest of the University, and with other agencies outside the University, e.g., certification agency school districts.

C. *Information Subsystem:* The Model Elementary Teacher Education Program will require a large amount of data collection and data manipulation for system control and monitoring. Highly structured and organized methods of data storage must be used in program implementation. Information must be readily available for decision-making. For example, trainees must be able to reschedule an instructional alternative within a short period of time. This implies the status of the resources necessary for the newly selected alternatives must be determined with ease. Files must be maintained indicating the current status of all resources including staff, facilities, and equipment.

Data which will be contained within this subsystem will involve: (a) aptitude and achievement data stored in the control subsystem; (b) sequence of learning experiences selected by each trainee to meet each performance criterion and some measure of the effectiveness of this sequence in relation to the trainee's goals; (c) the cost in terms of resources and the student and faculty time required to help each student meet each performance criterion through each instructional route; (d) system status of each trainee, i.e., what performance criteria he has met and what educational alternatives he is now engaged in for meeting which performance criteria; and (e) utilization and availability of all training resources including staff, equipment, and facilities.

D. *Placement Subsystem:* This is not completely within the bounds of the system, but it does play a very important function. Unless the product has a market the system will become inoperable. Therefore, one of the important tasks of the placement subsystem will be to disseminate information about the teacher-training program and the products of that program to prospective employers. In addition, this subsystem will determine qualifications and vocational interests of trainees, determine employment opportunities and recommend trainees to positions.

E. *Educator Subsystem:* The Educator Subsystem can be segmented into two not completely distinguishable components; human and automated. Both components are responsible for a direct educational interaction with trainees. This subsystem is responsible for generation of all instructional methods used by the teacher trainee. These models range from formal lectures to microteaching clinics. The subsystem must respond to demand changes by trainees in instructional alternatives. For example, if a trainee for good reason indicates a desire to terminate a seminar and initiate a simulation exercise, staff and equipment must be rescheduled quickly to meet this new demand. This rescheduling will be done within constraints of the availability of resources.

F. *Analysis Subsystem:* Feedback regarding the quality, success, competency, acceptibility and competitiveness of system output is provided by this subsystem. This feedback is used to add, delete, and modify performance criteria. The analysis of trainee performance and indirectly the effectiveness of performance criteria is measured using rating procedures, video tapes, archival data and market value of trainees. Comparative analyses are made of three groups, program graduates, graduates of other teacher education programs and the population of experienced teachers.

## MICHIGAN STATE UNIVERSITY

### *The Undergraduate Teacher Preparation Program Model*

A teacher education program, built upon the principles and techniques of behavioral science, demands an interdisciplinary approach. Each branch of knowledge contributes its own unique content and modes of inquiry to the total program, and as a result the student experiences the comprehensive character of organized knowledge as it relates to human behavior.

The five major curricular areas are General-Liberal Education, Scholarly Modes of Knowledge, Professional Use of Knowledge, Human Learning, and Clinical Experiences.

Explicit content and instructional recommendations for implementing these areas are presented as short, single-purpose experiences modules. Each module is directed toward the accomplishment of a particular behavioral objective, is reported and filed in a uniform manner, and can be used for individualized instruction. These modules are grouped into clusters which, for the purposes of administration and communication to the academic community, are described as "components" with quarter-term credit weightings.

This modular approach implements the particular values expressed through this project:

1. The value of specifying behavioral objectives
2. The value of precise description of instructional experiences
3. The value of multiple-path programming to provide for the specific needs of different trainees
4. The value of providing for curricular change through continuous testable small-scale alterations rather than sporadic general upheaval.

More than 2,700 modules were written and included in the program. An illustrative module can be found in the original report of the Michigan State model proposal. These modules have been stored in a specially designed information retrieval system, and can readily be retreived in their most current form. Through transfer of data cards or computer tapes, a college or university can obtain their own copy of the program.

### *General-Liberal Education*

A broad, basic core of general-liberal education designed to foster individual fulfillment and to prepare citizens for participation in a democratic society is necessary in teacher preparation. Students learn to understand the role language plays in society, to comprehend the physcial and biological aspects of the world, to understand differing cultures, to become more sensitive to their own role in modern societies, to grasp relationships as expressed in mathematics, and to conceptualize man's potentialities. All these objectives serve the purpose of a broader objective: to relate the teacher-trainee's knowledge to the study of human behavior.

General-Liberal Education is divided into three components: Humanities, social science, and natural science. Humanities involves the student in questions of value such as: "What is man?", "What is the good, the true, and the beautiful?", and "What should man live for?" The student begins his study of humanities with a workshop laboratory experience in the disciplines of literature, art, and music. In a subsequent series of experiences, he explores the basic issues of western man, classics of the west, and the American Quest. Exposure to the thoughts, institutions, and arts of the non-western world expand the student's view by sensitizing him to cultural biases.

The social science component introduces the students to the nature of the social science disciplines including geography, anthropology, sociology, political science, and economics. These fields are represented as systems. Geography, for example, is represented as a fundamental ecological system, anthropology as a cultural system, sociology as a social system. Through a carefully structured sequence of experiences, the decision-making model of social scientists are explored. The student becomes aware of the interaction among social forces and their impact on education.

The natural science component includes mathematics with its development of logic and mathematical proof. The first two modular clusters in this series draw heavily on a historical view of man's concept of the universe and of his theories concerning his own role. The final cluster presents an overview of mathematics, emphasizing the unique contribution of patterns and relationships between science and man.

A "Modes of Inquiry" seminar completes the General-Liberal Education pattern. This seminar deals, in a flexible and creative way, with the need of students to see the common aspects of all scholarly endeavors.

### *Scholarly Modes of Knowledge*

Scholarly Modes of Knowledge differs from General-Liberal Education in two essential ways: the content included in Scholarly Modes of Knowledge is directly applicable to teaching in the elementary school, and the modes or styles of inquiry of scholars are stressed. The compenent parts of the study of

Scholarly Modes of Knowledge are linguistics, communication, literature for children, fine arts, social science, natural science, and mathematics.

The basic goals of the linguistics component are to explore the nature of language as it has been determined by linguistic research; to distinguish facts from emotionally-based or culturally-determined views about language; and to investigate those results of contemporary research on the grammar of English which are directly relevant to the student's future role as an elementary school teacher.

Emphasis is placed in the communication component on verbal and non-verbal communication patterns. Simulated experience with cross-culture contacts aids the student to better understand himself and his feelings toward others; and as he increases his understanding of self and others, he is expected to analyze his encoding and decoding of messages and his choice of channels.

The study of literature for children combines the literary arts and the graphic arts. The characteristics of the genres of literature and the media and styles of art used by artists to illustrate children's books are studies, as well as the techniques and materials that the teacher can use to create an environment in which children enjoy and appreciate excellent literature.

The fine arts are considered in three aspects; art, music, and dance and drama. Emphasis is on the respective mode of perception and creativity of each area: visual, aural, and motor. Teaching art values, concepts, and productive behavior in children forms one basic concern in the program. The aural mode of perception is encouraged through music, while dance and drama provide an opportunity to respond aesthetically through the use of the whole person. The bodily form of expression and communication in dance and drama provide the future teacher with experience in objectifying in motion inner feelings and thoughts.

The Social Science component is devoted to social science theory and research. It emphasizes the interaction that takes place between personality and basic social systems. How, for example, does an individual affect the society of which he is a part. What role does society play in the life of the individual? The nature of conflict involved in these interactions and the decision-making process is a pervading theme of the section.

Science experiences are designed to develop the prospective elementary teacher's competency in the use of ideas and materials appropriate to elementary school science. Examples are taken from geological, biological, and physical sciences.

Providing a basic background for teaching elementary school mathematics directs the choice of content and method of approach for this component. The foundations of arithmetic, algebra, and geometry form the basic core of the program. Experiences in Scholarly Modes of Knowledge are interrelated with those in Professional Use of Knowledge and Clinical components. Thus, as the student learns mathematical content through lectures or directed independent study, he can practice the concept immediately in a mathematics laboratory, consider the implications for professional use, and employ his knowledge in a field setting.

### *Professional Use of Knowledge*

This area provides an opportunity for the student to learn how to translate knowledge into educational action in classrooms and communities. Building upon General-Liberal Education and the study of Human Learning and integrating with the work done in Scholarly Modes of Knowledge, this area Professional Use of Knowledge, focuses upon the study of instructional strategies used in the elementary school. Simulated and live contact with elementary-school-age children is planned. The component areas are reading, language arts, social studies, science, and mathematics.

Reading is organized to develop competencies in the teaching of basic developmental skills, readiness and beginning reading, recreational reading, and reading in the content areas. The experiences are designed to develop knowledge, comprehension, application, and analysis of reading methodology.

The Language Arts component focuses on the skills involved in listening, speaking, writing, and the supportive tool skills of spelling and handwriting. The strategy for study in these skills includes an examination of the objectives, instructional procedures, and evaluation techniques for each of the language arts through analysis of several programs in elementary schools.

Responsible, informed decision-making is the dominant theme pervading the entire social studies area. This theme is articulated in the Professional Use of Knowledge in two ways: by sensitizing undergraduate students to the range of decisions they are likely to encounter as teachers of the social studies, and by giving them actual experiences in making these decisions. A wide variety of instructional settings provide the foci for teaching decision-making to prospective social studies teachers. These include actual and simulated experiences in elementary classrooms, micro-teaching, self-study projects, and many different kinds of laboratory and field experiences.

In auto-tutorial, small and large group approach, students are involved in a multi-dimensional approach to elementary science philosophy, curricula, methods, skills, materials selection, media utilization and evaluation techniques. The professional appraisal of role in establishing procedures of scientific inquiry, attitudinal change and experimental design necessarily reflect societal as well as technological issues and problems.

In mathematics, the student has an opportunity to translate the mathematics learned in Scholarly Modes of Knowledge into instructional strategies for children. He becomes aware of the instructional dimensions to be considered in planning for related clinical activities.

### *Human Learning*

Specific study in the curricular area, Human Learning, occurs twice in the undergraduate program. Exploring human capacity for learning, understanding environmental systems, and inquiring into cognitive development are the three basic behavioral areas which planned educational experiences must bring into interaction. The first contact with systematic study of human learning occurs early in the prospective teacher's undergraduate program; the second occurs during the senior year, concurrent with internship. At this time the student studies the environmental systems which influence the growth of the human being and with which the educational process must be concerned. With increased urbanization in American Society and a changing cultural orientation, tools of inquiry in analyzing societal forces and experience in using the tools of inquiry in actual situations are important assets to teachers. As one experience toward mastering the use of the methods, concepts, and principles of environment investigation, students make an analytical study of their teaching community during internship.

### *Clinical Experiences*

To develop and expand a prospective teacher's facility in employing the clinical behavior style in teaching, progressive intensity of a pre-professional contact with children and schools is built into the preparatory program. Clinical procedures are analyzed and practiced through both simulated and actual situations. Four phases of clinical experiences are described:

1. tutorial
2. career-decision seminar
3. analytical study of teaching
4. team teaching, and internship

During internship trainees are assigned full-time to an elementary school classroom for an academic year. They assume autonomy and responsibility for classroom activities under the guidance of an intern consultant, and they receive significant assistance from university and school district resources. A unique cooperative school district-university fiscal arrangement for internship staff provides for five interns to be assigned to five elementary teaching stations under the direction of an intern consultant. The combined salaries of these six people is equated with that of five beginning teachers, thus insuring supervision as a built-in part of the program.

### *Teacher Specialization*

Program differentiation and specialization for the teacher-trainee occurs along two dimensions:

1. The amount and area of subject-matter specialization
2. The age of pupils to be taught

The development of the middle school and team teaching are two organizational approaches which require teachers with strong subject-matter competency. Further, experimental curriculum movements in mathematics, science, social science, and language demand increased expertise on the part of the teacher. As a result the role of subject-matter specialists is emerging in the elementary school.

Differences in the ages of children also require differences in the backgrounds of teachers. Professional translation of human study is focused upon the unique needs of each group of children. Program branching, therefore, is provided those students planning to teach preschool, primary school, and middle-school children.

### *Continued Professional Study*

The completion of pre-service teacher education requirements is only the beginning of a professional teacher's development. Joint responsibility by schools and universities for the in-service education of all professional and auxillary personnel is a necessity today.

This program model is predicated upon joint responsibility by several educational agencies for the continuing education of teaching staff. A Clinic-

School Network is establihsed to promote continual feedback and development of the program. A college or university works with one or more school systems. Larger programs incorporating several clinic-school centers could function as a network.

Elementary schools become the clinic setting for pre-service teacher development. They furnish the basis for materials upon which the undergraduate program is built, and they become the testing ground for teacher education theories. Prospective teachers observe pupils there and analyze teacher-behavior patterns. Interns teach there. University staff work there in developing appropriate materials for undergraduate instruction.

In a similar manner the university and the elementary school cooperates to promote the continuing education of practicing teachers. Through joint school district-university arrangements, seminars are developed. University scholars become sources of assistance in specific school studies concerned with improving instruction. Human and material resources from both the local school system and the teacher education institutions assist beginning teachers. Building upon intern experiences, skill in utilizing inquiry modes is further extended through a variety of learning situations.

Advanced study in the behavioral sciences for practicing teachers is directed toward a more sophisticated understanding of the variety of environments within which children develop, and the creation and utilization of the diagnostic, prescriptive, and evaluative tools for working with them in the school-community situation.

A small portion of post-MA teachers with highly developed clinical stances, leadership ability, and demonstrated success in teaching may be selected for extensive training in professional leadership. Such personnel would become catalyzers for further development and refinement of the clinical stance in teacher education. They would work with undergraduates, serve as team leaders in instructional team-teaching situations, be intern consultants, develop elementary school and university curriculum materials, be elementary school principals, and assist with elementary pupils having unusual or difficult learning problems.

The role and training of one such professional instructional leader, the media specialist, is described as a paradigm for the others. The need for instructional teams in elementary schools highlights the potential for such positions. One other staff position on such teams, the Associate Teacher, is delineated and a training program compatible with that herein described is outlined.

### *Program Evaluation and Development*

A viable teacher education program requires a carefully designed, extensive and workable evaluation system which in turn supports program development. Cognitive, affective, and psychomotor domains must be included in such assessments.

Each modular experience can, potentially, be tested for its contribution to a teacher's development, and test results can be compared with those of alternative experiences. The sequence of modular experiences can be assessed for continuity. Student assessment during the process, information retrieval, built-in check points, professor evaluation, and student performance during internship are some avenues for testing modules. These same procedures are useful in examining the effectiveness module clusters in the total program.

The teacher education program model is designed for constant evaluation and feedback into the program. With a clinic-school network to serve as a laboratory in many settings (rural, suburban, and inner-city), different school plants, cycles including teaching, working with interns and teachers, and program development and research. Some experienced teachers from clinic-schools return to college to work with undergraduates. Some of these teachers would contribute through program development, refining teacher behavior analyses, simulation, and microteaching while other teachers would focus primarily on research. Upper classmen work with students in the Career Decision Seminar. Through designated experiences with educators at other points in their development, trainees move from student-oriented to profession-oriented behavior.

Such regenerating through recycling is integral to the clinical approach emphasized in this model. Not only is the program designed to develop a clinical behavior style in graduates, it also utilizes a clinical approach in its own instruction of students and provides for continued renewal through analysis of the program itself.

### *Management*

An extensive and flexible management system is necessary to support a complex enterprise such as that described above. Five subsystems are included in the organizational plan: Program Development, Clinical Experiences, Evaluation, Information Retrieval, and Management Planning. The management component is designed to employ the same decision-making techniques advocated for teachers. The clinical behavior style permeates every phase of the program.

The Management Subsystem assists the other subsystems, the Planning Board, and the Project Advisory Council in the areas of systems planning, systems development, and systems analysis.

The Program Development Subsystem is responsible for developing and ultimately delivering the non-clinical experiences of students. Program development is accomplished by several means: revision of current modular experiences, input of new ideas or modes of inquiry from scholars in various content areas, the addition of new program tracts, and revision in the clustering and sequencing of instructional modules.

The Evaluation Subsystem assesses the viability of the program and its various components. It consults with program development personnel in precisely stating objectives; it mobilizes the instruments and analytical techniques of the behavioral sciences to observe, measure, and assess the overt actions of individuals and groups; and it suggests research designs to study program effectiveness.

The information retrieval subsystem supporting this program model provides, among its many services, data on student progress and personal characteristics, relevant factors in clinic-school settings, experience modules within the program, research data, and management data.

The computer's potentialities as a massive and highly accurate filing system commend its use in the project. The procedures of defining the curriculum in the form of experience modules particularly, require the sorting, correlating, purging, and replacing of many hundreds of peices of paper. In addition, helping students keep track of their progress through the various optional and structured paths that this curriculum offers demands the rapid handling of many thousands of bits of data.

This approach to information retrieval set forth in this program model is a modification of the BIRS (Basic Indexing and Retrieval System) programs, was a system that was developed by a team of scientists at Michigan State University.

## SYRACUSE UNIVERSITY

### *Assumptions Underlying the Structure of the Model*

The Model is based on six principal assumptions:

1. At this state in the development of teacher education there are many diverse views regarding what form a teacher education program should take. There is little empirical evidence to support any of these views. Rather than take one of these points of view, (a course of action that could provide the opportunity for an intensive test of its validity), the project staff has intentionally embraced many diverse views. This has not been done with the intention of developing an eclectic model, but rather has been done with the deliberate intention of creating an atmosphere of open dialogue in which hypotheses generated from many views can be tested. Throughout the description of the model the term *pluralism* is used. When it is used, it refers to the recognition of the existance of different views about the essential characteristics of an ideal teacher education program. It further recognizes that these different points of view exist together in this model for the expressed purpose of creating dialogue and generating and testing hypotheses about what constitutes appropriate teacher education experiences for students with different presage characteristics. *We assume that no one point of view regarding teacher education has been demonstrated to be most effective. We, therefore, assume that from a pluralistic open dialogue involving students, teachers, and researchers, that hypotheses can be generated and tested that may tighten the circle around those ideas, activities, artifacts, and people that would constitute a more ideal teacher education program than many of us currently work with.*
2. Closely related to the first assumption is an assumption drawn from the realization that we live in a world where basic institutions (including their value structures) are changing at an exponetial rage. Even if we could presume to know what would constitute the ideal teacher education program for elementary school teachers today, we could not presume that such a program would be anything more than an anachronism ten years from now. Nor could we presume that the teachers educated in that program would be not equally anachronistic. This Model Program, therefore, has been designed to educate teachers who can successfully function in the elementary school as it currently exists, who can adapt to change, and who can themselves help guide the direction of that change. Such teachers are referred to throughout this report as self-directed and self-renewing teachers. *We assume, therefore, an uncertain future in which there will be children to educate. We further assume that since we do not know what form that future world, its societies, and institutions will take, or how the children of such a society should be educated, that teachers educated*

*today must be educated to be continually self-renewing as they adapt to and play a major role in shaping the changes that seem certain in the world of education.*

3. This leads to the third assumption regarding the necessity for a Model Program that is an open system, a program which will nurture a pluralistic and changing teacher education program in the near and somewhat distant future. For an educational system to change appropriately in response to changes in the world in which it "lives," such a system must be an open system. Dialogue and research serve only at best to raise questions about and point the direction to appropriate change. Testing hypotheses at best generates data to serve as necessary but never sufficient evidence to support or refute the validity of instructional processes. When open dialogue leads to hypotheses, when hypotheses give direction to research that yields tentative data, when people act on such data, and when the effect of their actions are studied, this *is* an *intent-action-feedback* process. When the pluralistic dialogue extends beyond the educational system *qua* system, when hypotheses are posed regarding the relevance of elements of the educational system to the larger world in which the system *resides* and when this data is fed back into the system to confirm its validity or modify it, then the system is an open system. *We assume that the Model Program can continue to be relevant to the changing world in which it will "live" only if it has a built-in intention, action, feedback structure for processing ideas, generating hypotheses and data regarding the system qua system and the system in relationship to the changing world in which it will exist.*

4. The fourth assumption stems from the previous three. The "product" of this Model Program should be a teacher, with the skills, knowledge, and feeling states needed for being an effective elementary school teacher in 1974, yet that "product" must also possess the disposition and skills to change over his professional career so that he will also be an effective teacher in the year 2000. This clearly implies not only a continually changing program to produce self-renewing teachers, but in addition requires the continual inservice training of those who educate such teachers. This model clearly provides self-renewing experiences for teacher educators, so that the program and the teacher educators who staff that program will be responsive to the changing reality of elementary education. *We assume that the development of self-renewing teachers can only be accomplished by a program for the education of teachers that is a self-renewing program staffed by self-renewing teacher educators. This assumes continuing inservice education for the professional staff of the program.*

5. We posit that the self-renewing teacher as we use the term is in part a self-directed teacher. This implies the need for the recognition of human uniqueness. To assume that it is desirable for each student to go through the same educational experiences within the system at the same rate seems to deny human uniqueness. Thus this Model Program is designed as a largely self-paced program that provides multiple opportunities for students to not only learn certain programmatic constants at their own pace, but to explore individual avenues of interest and concern at their own option. *We assume that learning styles, learning rates, and what a person considers*

*important to learn in part constitutes the uniqueness of an individual. We further assume that providing a program that recognizes and accommodates these unique differences is one way of fostering the development of self-directed, self-renewing teachers.*

6. The sixth assumption grows out of our acute awareness of the present state of "cooperation" that exists between teacher training divisions of universities, the public schools, and the developers and producers of educational materials. The word "cooperation" has many meanings as it exists in the minds of those who work in teacher education. These range from "getting the schools to cooperate with us on our terms," to genuine collaborative efforts that grow from mutual concerns and interests. In between these two points, there are many shades of meaning. To reduce the potential of confusion of meaning we have chosen to use a specific term to refer to the type of cooperation that successful implementation of this Model Program assumes. The term is *protocooperation* and is borrowed from the field of ecology where it has a rather precise meaning. Protocooperation refers to a condition in which two or more organisms in interaction mutually benefit from their relationships with each other, but the relationship is not obligatory. When the organisms are not in interaction no harm accrues to any of the organisms. Since we assume the continued existence of teacher education institutions, public schools and the designers and developers of educational materials (at least in the foreseeable future), and since we assume their continued interaction, we propose that *protocooperation* is the term that most accurately describes what we mean by cooperation. *We assume that the optimum functioning of the Model Program described in this report is dependent upon a condition of protocooperation that involves teacher education institutions, public schools, and the designers and developers of educational materials working together in new ways.*

### *Structure of the Model Program*

The Model Program as described in the report is designed as a five year program. The first two years of the program and a substantial portion of the third year are devoted to liberal studies. The term liberal studies includes the conventional liberal arts courses as well as a Liberal Education Component. The term component is defined as a unified set of curricular-instructional experiences that constitute a "curriculum thread" that exists within the program over an extended period of time. The unifying elements of components are derived from the disciplines that they encompass, e.g., the liberal arts, developmental psychology, etc. The Liberal Education Component is the most diversified of all the program components with respect to a unifying disciplinary structure. It consists of three two-semester courses dealing with: (a) the humanities, (b) the social sciences, and (c) the natural sciences. The three courses of the Liberal Education Component are designed to provide a knowledge integrating function and to provide a medium for the study of contemporary issues of concern to, and processes used by people who work in the humanities, the social sciences, and the natural sciences. This block of liberal studies (the liberal arts and the Liberal Education Component) is designed to provide the student with a large measure of the knowledge and processes that, when translated into the language of elementary school children, become that which the teacher will teach to children.

The remainder of the junior year of the Model Program is designed to provide the student with a *pre-professional* introduction to the field of teaching. For the student, the junior year is in one sense an exploration of the world of the elementary teacher. The pre-professional part of the junior year is structured around six professional components. These components are: (a) the Methods and Curriculum Component, (b) the Child Development Component, (c) The Teaching Theory and Practice Component, (d) the Professional Sensitivity Training Component, (e) the Social and Cultural Foundations Component, and (f) the Self-Directed Component. Each of these components is highly process-oriented. That is to say they focus on: (a) *the process of using knowledge and skill in the area of elementary methods and curriculum* for the purpose of resolving teaching problems, (b) *the process of applying observational skill and knowledge of child development theories* in making curriculum and instructional decisions, (c) *the process of using principles of teaching theory* to develop a flexible repertoire of instructional behaviors to be used in teaching, (d) *the process of becoming more aware of self, self as a teacher interacting with children, and self as a teacher who is a member of an organization,* (e) *the process of using knowledge and skill from the social and cultural foundations* to understand the forces affecting pupils, teacher, and American education as well as the process of analyzing the logic of educational language, and (f) *the process of developing a disposition for self-direction as a student and a teacher.*

Each of these components is comprised of a series of instructional modules. A module is defined in this model as a planned instructional episode of a duration ranging from a minimum of several hours to a maximum of several months. Most modules have pre and post performance measures, though some are designed so that performance measurement in continuous. Modules in this Model Program take on many forms including totally mediated instructional episodes and student-directed seminars evolving around student concerns. The largest grouping of students specified in any module is found in seminars of twelve to fifteen students. In many modules the student engages in completely individual instruction.

During the junior pre-professional year, the student learns and applies his learning as he proceeds largely at his own rate through a series of instructional modules that comprise the six professional components. The applications of learning occur in such diverse settings as simulations, tutoring elementary school pupils, and in exploratory micro-teaching. Tutoring and micro-teaching is done in what is referred to in the model as Tutorial and Micro-teaching Centers, staffed by trained clinical teachers (elementary teachers who have had special training in diagnosis and remediation of pupil-learning difficulties). The Model provides for these centers to be located in elementary schools.

Thus, during the junior year, in addition to an exploration of the world of the elementary school teacher, the student learns a series of professional skills and knowledge that become the foundation for full-time professional study and practice during the senior professional year and the resident teaching year (fifth year). Should the student decide on the basis of the junior year of exploration, that being an elementary school teacher is not for him, provisions are made in the model for the student to continue his college program in some other field without loss of credit.

Should the student decide to pursue full-time professional study for his senior year, he would continue work in modules of the six professional components in greater depth and intensity. During the senior professional year, tutorial relationships with elementary school pupils and exploratory micro-teaching are replaced by a series of increasingly more complex teaching experiences that bring the student step by step to the point of planning, teaching, and evaluating a series of teaching units for which he is responsible. This teaching is done in what is referred to in the Model as Teaching Centers located at the public schools and staffed by trained clinical teachers and clinical professors. The supervision of the student in the Teaching Centers is accomplished through applying the concept of team supervision where generalists (clinical teachers) and specialists (clinical professors) work with the students in a variety of team-planning and team-evaluation sessions.

During the senior professional year, the student makes a decision about a teaching specialization. The specialization could be one as general as nursery school education or the social sciences, or as specific as information retrieval and data processing on children's literature for intermediate grade Mexican-American children. Provisions are made in the Model for the student to explore several specializations before making a tentative decision regarding a specialization of his choice. Assisting the student in the process of thinking through significant problems in elementary school education, finding a problem area that is of interest to the student and then working out a program of studies leading to a specialization in that area is one of the functions of the Self-Directed Component in conjunction with personnel from the other components. Each component provides for open exploration modules to assist the student in choosing an area of specialization.

By the completion of the senior year, the student should have developed skills, knowledge, and feeling states to function as an elementary teacher generalist and gain provisional certification in most states.

The Model provides at this point for another student decision. This decision involves pursuing the program of studies leading to a specialization and becoming a resident teacher for the fifth year of the Model Program. Should the student decide to continue for a fifth year, he would pursue his specialization program during the summers preceding and following the public school year, and engage in half-time partnership teaching at a Resident Center for an entire school year. In this Model, partnership teaching means that two resident students would share responsibility for one classroom for which each would receive half the salary of a beginning teacher. Supervision of the residents would be performed by a team of trained clinical professors who would also conduct seminars, the content of which would be drawn from residents' teaching problems and in many cases would be applicational extensions of the professional training obtained in the professional components of the junior and senior years. The partnership assignment of residents to one classroom would allow for flexible schedules of teaching, participation in special curriculum projects, and independent study in the student resident's area of specialization. The Model makes provisions for the granting of a master's degree or its equivalent upon completion of course work the summer following the resident year of teaching.

In summarizing the program, then, the Model provides for three years of professional study and practice based on a foundation of liberal studies. The three years of professional study and practice are designed as a series of largely self-paced experiences each of which is a successive approximation of the terminal goal of the Model Program--a skilled and self-directed teacher who can meet the demands of teaching at the time of his graduation from the program, but who has developed the disposition and skills for continued adaptation to a certainly changing world that will have substantial impact upon the nature of elementary education and the role of the elementary school teacher. Throughout the program, the Model calls for supporting services of the Self-Directed Component including provisions for counseling advisement and personal exploration of goals, values, and their consequences when acted on in a professional setting.

### *Supporting Systems*

Though this summary is but a cursory overview of the detailed description of the Model Program that is explained in the full report the reader must be struck with questions relating to such issues as: (a) the instructional logistical problems associated with a modularized, largely self-paced program that makes use of a variety of instructional experiences located in university and public school facilities, (b) the need for collection, analysis, and storage of information to monitor student progress, evaluate the program and provide data for research, (c) the inservice training of university and public school personnel to staff such a program, and the establishment of a protocooperative organization in which teacher training institutions, public schools and the designers and producers of educational materials share responsibility, resources, and personnel for educating teachers.

The designers of this Model Program are also acutely aware of the potential problems that face an adopting institution. Thus, an integral part of the Model is made up of three support systems without which such a complex teacher education program as the one specified in this Model would "fall from its own weight." These three support systems are: (a) the Program Support System, (b) the Information and Evaluation Support System, and (c) the Organizational Support System.

The Program Support System has three primary functions: (a) the design, development, and testing of instructional modules, (b) the redesign, re-development, and re-testing of instructional modules that when put into operation do not function up to specifications, and (c) providing the necessary maintenance functions to support the instructional program in operation. Each of these, but particularly the re-design function, is dependent upon a variety of information.

The Information and Evaluation Support System has an important role to perform in providing the Program Support System with the information it needs to perform its re-design and re-development functions. In addition, the system is charged with the task of gathering information about student progress and feeding this information back to the student and instructional staff in a form that will be useful in facilitating the student's self-paced progress through the program. A third function of this system is that of evaluating the effectiveness of the program (process) for students with different characteristics (presage) in terms of the program's ability to foster the development of competent, self-directed teachers (product). Finally, it is a function of this system to disseminate findings derived from a study of the experimental program in operation to other teacher training institutions.

The Organizational Support System has as its responsibility the development of personnel (through inservice training) and the development of an organization that can facilitate the attainment of the goals of the Model Program by focusing both on the internal operating structure of the program itself (involving personnel and processes), and its relationship with the larger organizations with which the

Model Program would be associated and on which it would be dependent (the total university, the total school system, and the educational industries and/or regional laboratories that would design and develop the educational materials necessary for the program's operation). One of the key functions of this system is to create, over time, a protocooperative federation of diverse institutions that will: (a) profit from such a federation, (b) tap the unique potential that each sector of the educational enterprise has to contribute to the task of educating teachers, and (c) assume mutual responsibility for the education of teachers who in turn will educate the children of our country.

This summary has been a sketch with broad brush of a Model for a program for the comprehensive undergraduate and inservice education of elementary school teachers. Detailed descriptions of the assumptions, program elements, and supporting structures referred to in this summary are provided in the full report.

## UNIVERSITY OF TOLEDO

### *The Design*

Figure 2[29] presents a graphic representation of the conceptual design of the project. A guide to the various personnel resources assembled is provided in Figure 3[30]. The statement of goals for the program of teacher education was adapted from the objective and comprehensive effort of the Committee on Quality Education of the Pennsylvania State Board of Education. A search for appropriate goals among formulations for existing programs had been a waste of time. The goals, as adapted, were submitted to a steering committee of outstanding authorities and to the members of the consortium for modification, addition, and, in a sense, legitimation. The statement of goals received enthusiastic support.

Because an initial and continuing concern of the project was to accommodate the forces of change, it was decided to begin to refine the general goals by considering them from the perspective of five *contexts*. These contexts--instructional organization, educational technology, contemporary learning-teaching process, societal factors, and research--represent the more important sources of change in teacher education today. An authority in each of these context fields prepared a position paper on his topic. Other knowledgeable persons in each context field were provided with these position papers and asked to react to them. These position papers and reactions were a rich source of data in the preparation of behavioral objectives.

The behavioral objectives were a result of the combined efforts of the project staff, consultants, and an independent consulting agency, EVCO Basic Instructional Research Design in Albuquerque, New Mexico. The consultants and staff provided the knowledge of the content, and EVCO provided the expertise in the form of behavioral objectives. It was a productive partnership generating over 2,000 behavioral objectives.

Because this was to be a comprehensive program, objectives were prepared for six target populations concerned with teacher education:

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[29] *Supra*, p. 11*

[30] *Supra*, p. 12*

* References to pages in final report.

1. Pre-Service--Pre-School and Kindergarten Teachers
2. Pre-Service--Elementary Teachers (Grades 1-8)
3. In-Service Teachers
4. College and University Personnel
5. Administrative Personnel
6. Supportive Personnel

The process at EVCO was to secure a breakdown of each context into major subject areas which were further divided into topics. Behavioral objectives were then prepared for topics under each of the six target populations listed above.

### *The Product*

Educational specifications were then formulated to implement the entire range of behavioral objectives. These consist of the behavioral objective(s) to be implemented, the treatment to be utilized in accomplishing the objective(s), materials needed, and the evaluation procedures to be applied to determine whether the objective(s) have been successfully achieved. Because of overlap, 818 specifications were able to accommodate the 2,123 objectives. Specifications were prepared by the project staff, personnel from the Wisconsin R&D Center, MOREL (a regional laboratory), and consultants. These personnel received uniform instructions via *A Manual for Specification Writers* prepared by the project director.

The specifications are collected in a separate volume (Volume II) to facilitate handling and reading of the project report. They are organized according to a content breakdown under contexts, subject areas, and, finally, topics.

### *Organization for Implementation*

In order to deal with the 818 specifications it was necessary to process them in some way to permit selection, rejection, ordering and reordering according to the population to be served. This was accomplished by a coding process. Each of the four major parts of every specification has been coded by the project staff according to the scheme presented in Chapter IV of the report. There are, of course, many advantages to this procedure, but the most obvious is the rapid collection of all specifications pertaining to one target population. In order to demonstrate this capacity and to provide a guide for those wishing to implement aspects of the program, the specifications are grouped according to the six major target populations.

Table No. 17 indicates the number of specifications by context required by the composite programs for each target population. Of course, this is only a gross summary to suggest the dimensions of the programs. Actually, the user would be supplied with the numerals of each specification in the population and a detailed summary of all of the information coded. This, in itself, tells one much about the requirements of a program for the particular target population. There is, however, no one prescribed way of ordering the specifications. This could be a function of progressive difficulty of content, of ease of administration--that is all activities to be performed in the field or the classroom could be grouped together--of teaching method such as academic presentation followed by simulation, followed by actual application, or of other criteria relevant to the particular conditions of users of the specifications. The organization of specifications under the six target populations in Chapter IV of the report suggest various techniques of ordering the specifications.

### TABLE 17

### SUMMARY OF COMPOSITE SPECIFICATIONS
### FOR
### SIX TARGET POPULATIONS BY CONTEXT

| Target | Context | | | | | |
|---|---|---|---|---|---|---|
| | Instructional Organization | Educational Technology | Learning-Teaching Process | Societal Factors | Research | Total |
| Pre-School | 157 | 60 | 102 | 74 | 67 | 460 |
| Elementary | 151 | 75 | 102 | 69 | 67 | 464 |
| In-Service | 144 | 85 | 113 | 91 | 77 | 510 |
| College & University | 79 | 93 | 96 | 65 | 116 | 449 |
| Administrative | 62 | 70 | 103 | 126 | 77 | 438 |
| Supportive | 22 | 71 | -- | 28 | -- | 121 |

## *Additional Capabilities of the Process: Special Purpose Model Programs*

It is highly essential that a completely new program of teacher education provide easy access to groups whose needs and interests are found in parts of the total program but who cannot participate in all aspects of one of the programs prescribed for the six target populations. To create programs for such special purposes it is necessary to agree upon the general goal and the specific objectives. These become the selection criteria to draw out appropriate specifications. When the cards were sorted for one example, special program--Research Training for Teachers Conducting Research in the Instructional Setting--ten topics were identified in three contexts using only 49 separate specifications. Such a program would likely be offered as an eight week summer institute. This exercise is found in Chapter IV. It is included as a prototype of the myriad of special purpose model programs.

## *Characteristics of Programs Utilizing the Educational Specifications*

It is difficult to generalize about the various uses of the specifications discussed under the selected target populations and the one prototype special purpose program. However, there are a few dominant characteristics of any program based on these objectives and specifications. These are detailed in Chapter IV of the report. Among these easily identifiable characteristics are:

1. The major instructional focus will be on the contexts of Instructional Organization and Contemporary Learning-Teaching Process.
2. Both Educational Technology and Societal Factors will receive more attention than in traditional programs.
3. There will be an emphasis on conducting and using research in the instructional setting.
4. The treatments indicate a program which is actively centered.
5. Student involvement is equally divided between individual study and group or team experience.

6. Typical treatments provide for a progressive involvement from observation through simulated activity to direct classroom experience.
7. Conference, performance, and observation are important means of evaluation.
8. A wide variety of media is required to implement these programs.

### *Evaluation*

The process of evaluation selected for this project was of prime importance because it must not only guide the planning stage but serve again to direct the implementation stage of the project. Then, too, it was necessary to devise an evaluation model which would permit comparisons between the consortium program and other strategies of teacher education. The model prepared by Professors Stufflebeam and Hammond of Ohio State University has all of the requisite capabilities and more. The model is referred to by the acronym CIPP suggesting the comprehensiveness and versatility of the model in dealing with evaluation of Context, Input, Process, and Product. Figure 10[31], A conceptual schema of the total proposed evaluation system, presents a symbolic overview of the total evaluation program which provides for systematic content evaluation and *ad hoc* process and product evaluations. A significant portion of the project resources for the implementation phase of the program will be placed in the evaluation component.

There are many innovative features in the specifications for a new teacher education program. Among these none is so important as the evaluative process. For the first time in history a program has been arranged in behavioral terns so that it may not only be evaluated at a given point in time, but also so that it is self-correcting. Provisions for prompt and objective feedback are the most innovative elements and will enable all concerned to disucss the success or failure of a program to prepare educators in meaningful terms. This enables the implementing institutions to enter into the new program with confidence that if the selected specifications are not complete or not relevant, they will be supplemented or modified *in the regular course of the program.*

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[31] *Supra*, p. 225*

* Reference to final report.

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